PREVENTION OF MOTHER-TO-CHILD TRANSMISSION PROGRAMME: HOW "INFORMED" IS THE LITERATE MOTHER'S DECISION REGARDING INFANT FEEDING OPTIONS IN THE GERT SIBANDE DISTRICT, MPUMALANGA PROVINCE, SOUTH AFRICA?

Thesis

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DECLARATION OF AUTHENTICITY

I, the undersigned, hereby declare that the work contained in this thesis is my own original work and that I have not previously in its entirety or in part submitted it at any university for a degree.

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ABSTRACT

Introduction

"A comprehensive package of care for the Prevention of Mother-To-Child Transmission (PMTCT) of HIV" states that all mothers participating in the PMTCT Programme should receive education that will enable them to make informed decisions about infant feeding options. Rapid, same-day HIV testing and results that are available immediately, enable health care workers to be responsible for providing pre- and post-test counselling (which includes infant feeding options) on the same day. This could place a tremendous workload and time pressure on the health care workers.

The aim of this study was to determine how "informed" is the literate mother's decision regarding infant feeding options, who participated in the PMTCT Programme, in the Gert Sibande District, Mpumalanga, South Africa.

Method

Data was collected from health care workers and mothers on the PMTCT Programme at 23 PMTCT sites in the Gert Sibande District, with the help of 6 field workers and the PMTCT site manager at each PMTCT site, by means of once-off, self-administered questionnaires, which had been previously tested and validated.

Results

Health care workers' attitude towards the PMTCT Programme was positive, although some (14%) indicated that what was expected of them was not achievable in their working environment. The most prominent change relating to the personal preferences of health care workers regarding infant feeding options for HIV-infected mothers, after attending the 5-day PMTCT course, was from formula-feeding to breast-feeding. Most (65%) indicated it was possible to stay neutral in a counselling session regardless of personal preference for infant feeding and 60% of those who could not stay neutral, still thought it was in the mother's best interest to be counselled by them. Most (98%) agreed mothers had the right to make informed decisions and 80% agreed mothers were able to

make such a decision. Most (67%) health care workers indicated that not enough staff was stationed at PMTCT sites, only 53% used the feeding option cards when counselling mothers and indicated that more educational material was needed. Sixty one percent of the health care workers demonstrated the preparation of the formula to the mothers and allowed the mothers to demonstrate back to them. Between 49-82% and 37-56% of the health care workers knew the correct answers to knowledge questions relating to breast-feeding and formula-feeding, respectively. Not one health care worker, nor mother, knew all the steps in preparing a formula feed. Most (80%) mothers made decisions based on information provided to them by health care workers and only a small (13%) percentage were influenced by the community to practise a different feeding option than what they had chosen.

Conclusions:

The attitude, personal preferences, knowledge of and resources available to health care workers, influenced the decision made by mothers regarding infant feeding options and seeing that most mothers made their decision, based on information provided by health care workers, it is concluded that mothers can only make an informed decision about infant feeding options if they are advised appropriately by well trained, equipped and informed health care workers.

OPSOMMING

Inleiding

"A comprehensive package of care for the Prevention of Mother-To-Child Transmission of HIV", vermeld dat moeders, wat deelneem aan die Voorkoming van Moeder-Tot-Kind Oordrag (VMTKO) progam, voorligting behoort te ontvang ten opsigte van voedingsopsies vir hul babas, sodat hulle in staat sal wees om 'n ingeligte keuse te maak. Gesondheidswerkers is verantwoordelik om voorligting voor en na die HIV toets te gee, wat die voedingsopsies vir babas insluit, op dieselfde dag. Dit kan 'n ontsaglike werkslading op die gesondheidswerkers plaas.

Die doel van die studie was om te bepaal hoe "ingelig" is die geletterde moeder se keuse ten opsigte van voedingsopsies, wat deelneem aan die VMTKO program, in die Gert Sibande distrik, Mpumalanga, Suid-Afrika.

Metode

Die data is ingesamel by 23 VMTKO-klinieke en -hospitale in die Gert Sibande distrik onder gesondheidswerkers en moeders op die VMTKO-program, met behulp van 6 veldwerkers en VMTKO-bestuurders, deur middel van eenmalige, selfvoltooide vraelyste, wat van tevore getoets en gevalideer was.

Resultate

Die gesondheidswerkers se houding teenoor die VMTKO-program was positief, alhoewel 14% aangedui het dat wat van hulle verwag word nie prakties of moontlik is in hul werksomgewing nie. Die prominentste verandering rakende die persoonlike voorkeure van die gesonheidswerkers teenoor voedingsopsies vir HIV-geinfekteerde moeders, na die 5-dag VMTKO kursus, was van formulavoeding na borsvoeding. Meeste (65%) het aangedui dit is moontlik om neutraal te bly gedurende 'n voorligtingssessie, ten spyte van persoonlike voorkeure vir voedingsopsies en 60% van die wat nie neutraal kon bly nie, het steeds gedink dit is in die beste belang van die moeder om deur hulle voorgelig te word. Meeste (98%) het saamgestem dat dit die moeder se reg is om 'n ingeligte keuse te

maak en 80% het saamgestem dat die moeder wel instaat is om so 'n besluit te neem. Meeste (67%) gesondheidswerkers het aangedui dat personeel tekorte bestaan by die VMTKO klinieke en hospitale. Slegs 53% gebruik die voedingsopsie kaarte gedurende 'n voorligtingsessie met die moeder en het aangedui dat meer voorligtingsmateriaal benodig word. Een en sestig persent van die gesondheidswerkers het die voorbereiding van die formulevoeding aan die moeders gedemonstreer en het moeders toegelaat om ook die demonstrasie te doen. Nege en veertig tot twee en tagtig persent en 37-56% van die gesondheidswerkers kon die korrekte antwoorde verskaf vir vrae oor borsvoeding en formulevoeding, afsonderlik. Nie een gesondheidswerker of moeder kon al die stappe vir die voorbereiding van die formulevoeding noem nie. Meeste (80%) moeders maak keuses gebaseer op inligting wat aan hulle verskaf word deur die gesondheidswerkers en slegs 'n klein persentasie (13%) word beïnvloed deur familielede om die teenoorgestelde voedingsopsie te praktiseer as wat hulle gekies het.

Gevolgtrekking:

Die houding, persoonlike voorkeure, kennis van en hulpbronne beskikbaar aan die gesongheidswerkers, beïnvloed die besluit wat moeders neem ten op sigte van voedingsopsies en aangesien die moeders hulle besluit baseer op inligting wat deur die gesondheidswerkers aan hulle gegee word, word die gevolgtrekking gemaak dat moeders slegs 'n ingeligte keuse aangaande voedingsopsies kan maak indien hulle voorligting ontvang deur goed opgeleide en ingeligte gesondheidswerkers.

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LIST OF ABBREVIATIONS

ABBA	Aid Babies Battling AIDS
AIDS	acquired immunodeficiency syndrome
ANOVA	analysis of variance
CHC	community health centre
DOH	Department of Health
HIV	human immunodeficiency virus
HIV/AIDS	HIV infection at any stage of the disease, including AIDS, emphasising the link between HIV and AIDS
HIV-1	human immunodeficiency virus type 1
KAP's	knowledge, attitude and practices
MIV	*menslike immuniteitsgebreksvirus*
MTCT	Mother-To-Child Transmission
n	number, referring to sample size
PMTCT	Prevention of Mother-To-Child Transmission of HIV
PNT	Post-natal HIV Transmission
SD	standard deviation
SOI	*seksuele oordraagbare infeksie*
STD	sexually transmitted disease
TLC	Transitional Local Council
TOT's	Trainers of Trainers
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNICEF	United Nation International Children's Emergency Fund
VCT	voluntary counselling and testing
VMTKO	*Voorkoming van Moeder-Tot-Kind-Oordrag*
WHO	World Health Organisation

LIST OF DEFINITIONS

Breast milk banks	a service established for the purpose of collecting, screening, processing and distributing donated human breast milk to meet the specific medical and/or nutritional needs of individuals for whom it is prescribed.
Correct positioning	of an infant at a mother's breast is indicated by the infant's head and body being straight, facing the mother's breast with his/her nose opposite the mother's nipple, with the infant's body close to the mother's body and the whole body of the infant supported, not just the neck and shoulders.
Cup feeding	feeding an infant from an open cup with whatever is in the cup.
Exclusive breast-feeding	giving an infant no other food or drink, not even water, apart from breast milk (including expressed breast milk), with the exception of drops or syrups consisting of vitamins, mineral supplements or medicine as medically indicated.
Feasible	executability, performability
Feeding options	The 4 main feeding options presented to a mother during consultation namely exclusive and continued breast-feeding, modified breast-feeding, replacement feeding and wet-nursing or breast milk banks.

Field workers for the purpose of this study refers to the 6 dietitians / community service dietitians / nutrition coordinators from the different municipal areas in the Gert Sibande District who helped with data collection.

Good latching of an infant to the mother's breast is indicated by the lower lip of the infant curled outward, the infant's chin touching the mother's breast and the infant's mouth covering most of the areola, not just the nipple.

Health care workers for the purpose of this study includes registered nurses, professional nurses, senior professional nurses, chief professional nurses and lay counsellors who are responsible for post-test counselling and excludes doctors, health promotors, programme coordinators, training course facilitators, pharmacists and dietitians who attended the 5-day PMTCT course, but are not responsible or involved in post-test counselling.

HIV-infected women who have taken an HIV test whose results have been confirmed as positive and who know that they are infected.

HIV-uninfected women who have taken an HIV test with a negative result and are assumed to be uninfected and who know their result.

Infant a child from birth to 12 months of age.

Informed decision the mother's right to choose the most appropriate method of feeding her child no matter what her HIV status, based on adequate information provided to her.

Mix(ed)-feeding occurs when a mother both breast-feeds and formula-feeds her infant.

Modified breast-feeding includes the early cessation of breast-feeding and heat-treated breast milk.

Non-professional includes enrolled nurse assistants, enrolled nurses and lay counsellors.

PMTCT site A hospital or clinic in the Gert Sibande District which implemented the PMTCT Programme.

PMTCT site manager The nursing sister in charge of the PMTCT Programme at a specific PMTCT site.

Predominant breast-feeding includes breast milk and non-milk liquids, where breast milk predominates.

Professional includes professional nurses, senior professional nurses and chief professional nurses.

Replacement feeding the process of feeding an infant who is not receiving any breast milk with a diet that provides all the nutrients the infant needs. During the first six months this should be with a suitable breast milk substitute which, for the purpose of this study, includes commercial infant formula and not home-prepared formula. After six months it should

preferably be with a suitable breast milk substitute, and complementary foods made from appropriately prepared and nutrient-enriched family foods, given three times per day. If suitable breast milk substitutes are not available, appropriately prepared family foods should be further enriched and given five times a day.

Trainer of trainers individuals who attend training courses and act as trainers of other health care workers in their specific municipal areas.

Wet-nursing when an HIV-uninfected woman, usually a relative, breast-feeds the infant of an HIV-infected woman.

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CHAPTER 1

INTRODUCTION AND PROBLEM STATEMENT

1.1. BACKGROUND

The global burden of the human immunodeficiency virus (HIV) disease lies in sub-Saharan Africa. In 2002 the Joint United Nations Programme on HIV/AIDS (UNAIDS) estimated that of the 36 million adults and children living with HIV/AIDS globally, 24,5 million live in sub-Saharan Africa. The United Nation International Children's Emergency Fund (UNICEF) estimated that roughly 1,8 million HIV-infected women are pregnant every year and approximately 600 000 to 700 000 HIV-infected infants are born annually[1]. Within South Africa, an estimated 7 373 071 million people are already infected[2]. South Africa has the fastest growing rate of HIV infection in the world, the highest prevalence being among 20-30 year old women[3]. Mother-to-child infection takes place through the intra-uterine route, during labour and delivery, and through breast-feeding. Approximately 200 000 to 350 000 infants (internationally) are infected with HIV, through breast-feeding, each year[1]. Transmission rates of HIV from mother to infant are as high as 35% where there is no intervention and below 5% when antiretroviral treatment and appropriate care are available[4].

Breast-feeding has several documented benefits, but the fact remains that the human immunodeficiency virus type 1 (HIV-1) can be transmitted through human milk. In developed countries like the United States, HIV-infected women are advised not to breast-feed, because replacement feeding is safer in terms of transmission, affordable and culturally acceptable. However, in areas of the world where breast-feeding is the norm, and safe replacement feeding is generally not possible, the catastrophic epidemic of mother-to-child transmission (MTCT) of HIV-1, continues[5].

1.2. A REVIEW OF INFANT FEEDING OPTIONS

1.2.1. Infant feeding options

Recognition that HIV-1 could be transmitted through breast-feeding precipitated a public health dilemma. Breast-feeding has long been promoted as a means of decreasing infant morbidity and mortality, but in the HIV/AIDS era it poses a potential health hazard[6,7]. Differences in the risk-benefit ratio associated with breast-feeding ultimately led to two sets of public health recommendations. In settings with readily available safe breast milk substitutes and low background infant mortality rates, withholding breast-feeding is not expected to be associated with increased infant mortality rates and thus HIV-infected women are advised not to breast-feed. In contrast, in resource-poor settings, withholding breast-feeding is known to significantly increase infant morbidity and mortality due to infectious diseases and malnutrition[6]. However the risk-benefit ratio, for an HIV-infected woman is not constant throughout resource-poor settings: some women in such settings might in fact be able to provide safe infant feeding alternatives to their infants[6].

The current guidelines of the World Health Organization (WHO), the UNAIDS, and the UNICEF, recommend that women living with HIV be fully informed of both the risks and benefits of breast-feeding and be supported in their decision about feeding practices, and that the protection, promotion and support of breast-feeding, among HIV-uninfected mothers or those of unknown HIV status, be strengthened. These guidelines aim at enabling women to make fully informed decisions with regard to infant feeding options[6,8]. This is exactly what the Operational Plan for Comprehensive HIV and AIDS Care, Management and Treatment for South Africa strives to achieve[9]: *"HIV-infected, lactating mothers will receive appropriate counselling to facilitate informed decision making, particularly in discordant situations where the newborn child is not infected with HIV"*.

1.2.1.1. Exclusive breast-feeding

The literature regarding HIV-infected women is conflicting. Some studies have shown an increased risk of transmission with breast-feeding compared with formula-feeding[10,11,12,13,14], whereas others have shown no additional risk of breast-feeding[7,14,15]. In a prospective cohort study which compared transmission rates in exclusively breast-fed, mixed-fed and exclusively formula-fed infants, the authors concluded that exclusive breast-feeding does not seem to convey any excess risk of HIV-1 transmission over formula-feeding[7]. In Zimbabwe a study showed that exclusive breast-feeding had a lower post-natal HIV transmission (PNT) rate than predominant breast-feeding, while mixed-feeding doubled the risk of PNT[16]. The benefits of breast-feeding are well recognised and have been well documented[1,17,18]. Important benefits to the mother are reduction in risk of breast and ovarian cancer as well as lactational amenorrhea, which is important for birth control in developing countries[1]. The most important benefits to the infant are reduction in both morbidity and mortality in developing countries[1,18] and reduction in morbidity in developed countries[1]. Other benefits of breast milk include health, nutritional, immunologic, developmental, psychological, social, economic and environmental benefits[18]. Exclusive breast-feeding in the African setting is very rare[19], but when a mother chooses to exclusively breast-feed her infant, there are several risk factors (Table 1.1) associated with transmission of HIV of which the health care worker must inform the mother[20,21,22].

Table 1.1: Factors associated with increased risk of MTCT of HIV

	Risk factor	Strength of evidence
Maternal	High viral load – recent infection and advanced HIV disease	Strong
	Advanced disease – clinical symptoms	Strong
	Immune deficiency – low CD4 and high CD8 cell counts	Strong
	Maternal malnutrition	Limited
	HIV infection acquired during pregnancy or breast-feeding period	Strong
Obstetric	Vaginal delivery	Strong
	Prolonged rupture of membranes	Strong
Infant	Duration of breast-feeding	Strong
	Non-exclusive breast-feeding in the first 3-6 months	Limited
	Breast-feeding while experiencing breast infections – mastitis, abscesses	Strong
	Breast-feeding while experiencing nipple fissures	Strong
	Breast-feeding an infant with mouth sores	Limited

SOURCE: Peckham, 2000; S 41
Piwoz, 2000; 38
Semba, 1999; 151

Several studies indicated that mastitis almost doubles the vertical transmission rate[11,22] and that the prevention and early treatment of mastitis might have a positive impact on decreasing vertical transmission of HIV-1 through breast-feeding[11,14,22,23]. Failure to inform the mother of these important factors, can lead to an increased transmission rate, through breast-feeding. For HIV-infected mothers who choose to breast-feed, maternal health promotion may decrease transmission by reduction of sub-clinical and clinical mastitis, and interventions that should be included are:

(a) lactation counselling for promotion of exclusive breast-feeding and correct positioning and attachment of the child to minimise breast and nipple trauma;
(b) promotion of adequate anti-oxidant micronutrient status through diet or supplementation; and

(c) control of opportunistic infections[24].

In the Ndola District of Zambia it was found that increasing women's knowledge of MTCT did not appear to erode good breast-feeding practices[25]. Among women who did not know their HIV status and among women who were aware of their status, the recommended practice of exclusive breast-feeding up to the age of 6 months increased, and the riskier practice of mixed-feeding decreased, through continuous education. The study also found that even among women who knew that they were HIV-infected, very few chose to discontinue breast-feeding altogether and exclusively use replacement feeding. The latter finding suggests that stigma and the cost associated with replacement feeding continue to be important disincentives[25].

1.2.1.2. Modified breast-feeding

Early cessation of breast-feeding

Early cessation of breast-feeding reduces the risk of transmission by reducing the length of time that an infant is exposed to HIV through breast-feeding[26]. Findings of a study in Durban, South Africa, suggested that exclusive breast-feeding followed by early and abrupt weaning may be one option for reducing MTCT through breast-feeding while minimising the adverse consequences of replacement feeding in Africa[27]. It has been found that the first two or three months of life constitute the most risky period for artificial feeding in environments with poor hygienic conditions[26].

Stopping breast-feeding when the infant is 6 months old is an option to avoid late postnatal transmission[7,28]. In order to decide on an optimal weaning time, data regarding timing of breast milk transmission are urgently required[29]. The efficacy and safety of this intervention have not been established and studies are currently in progress to provide further information[30]. Breast-feeding for 6 months carries approximately a 5% risk of transmission and the continuation of breast-feeding for up to 2 years, increases the risk to about 15%[1]. Early cessation of breast-feeding will depend on the individual

circumstances of the mother and is indicated if an HIV-infected mother develops symptoms of the acquired immunodeficiency syndrome (AIDS), otherwise it is advisable to continue exclusive breast-feeding up to 6 months[27].

Pretoria pasteurisation

Pretoria pasteurisation is a method by which an HIV-infected mother can express and heat-treat her milk in order to inactivate the virus and make the breast milk safe for infant feeding while still maintaining the nutritional value and protective properties of the breast milk. It works on the principle of passive heat transfer from boiled hot water contained in an aluminum pot to the expressed breast milk, which is contained in a glass jar and inserted into the hot water[31].

This method was tested by asking HIV-infected women to donate a sample of breast milk, which was then split in two portions, one which was immediately cultured to grow HIV and the other which was pasteurised with the Pretoria pasteurisation method and then cultured to grow HIV. HIV grew in many of the samples which had not been pasteurised, but there was no growth of the virus in samples which had undergone Pretoria pasteurisation[31].

The method also kills common commensual bacteria (e.g. *Staphylococcus epidermis*) and pathogenic bacteria (e.g. *Escherichia Coli, Staphylococcus aureus*). The pasteurised milk can be kept (preferably in a refrigerator) for up to 12 hours if basic principles are strictly applied[31]. The additional advantage of pasteurisation at 56°C for 15 minutes is the preservation of 90 percent of the protective factors[32] found in breast milk.

At the end of 2001 the method was implemented at Kalafong Hospital, South Africa, among preterm infants born to HIV-infected mothers. Mothers found the method acceptable and easy to perform. After leaving the hospital some continued to use the method, but others stopped because of the fear of disclosing their HIV status to family or community members[30]. Although more successful in an institutional than a domestic

setting, Pretoria pasteurisation may fulfill a valuable role as an alternative to exclusive breast-feeding during times of increased risk, such as mastitis and cracked or bleeding nipples[30].

1.2.1.3. Replacement feeding

"*Formula-feeding is the principal recommended method of feeding, in an ideal world where voluntary counselling and testing (VCT) and adequate information and education on HIV is provided and where safe and adequate formula-feeding is possible with ongoing support for the mother and monitoring of the infant*"[28].

Arguments for formula-feeding

It is generally accepted that formula-fed infants in resource-poor settings, have higher morbidity and mortality rates than breast-fed infants[1,6], but it has been documented that where participants have access to clean water and extensive instructions in safe use of formula, mortality rates in the formula- and breast-feeding groups are similar[33]. In the context of HIV/AIDS it has been demonstrated that in resource-poor settings where the participating women have access to clean water, extensive health education regarding safe preparation of formula, a reliable supply of formula and access to medical care for their infants, formula-fed infants had a better outcome than breast-fed infants with an increased likelihood of being alive and HIV-1 uninfected at the age of 2 years[34]. In some countries, such as Thailand, with a low risk of infant death from other infectious diseases and malnutrition, the prevention of mother-to-child transmission (PMTCT) programme recommends that all HIV-infected women be discouraged from breast-feeding, free formula is provided to these mothers and the training in counselling skills and periodic re-training for health professionals are very important[35].

Arguments against formula-feeding

In a study conducted in Soweto and Khayelitsha, South Africa, women indicated that their reasons for choosing formula-feeding was because they were advised to do so by their nurse/counsellor, because of their HIV status and health reasons, because of family pressures or as an interim measure until they disclosed their status[30]. Simply providing access to formula is not equivalent to providing safe alternatives to breast-feeding[6], and even with the adequate supply of formula and nutritional counselling better growth occurred in breast-fed infants[34]. The problem in most sub-Saharan settings is that the infrastructure required to lessen the risks of formula-feeding is unlikely to exist[6]. Further risks of formula-feeding were examined by the WHO in a pooled meta-analysis of studies conducted in developing countries in populations of unknown HIV status. The analysis suggests that infants who are not breast-fed and receive formula milk or other replacement feeds have a 6-fold increased risk of dying in the first 2 months of life, a 4-fold increased risk between 2-3 months and a 2,5-fold increased risk between 4-5 months compared with those who are breast-fed[1].

In South Africa it has been shown that the mortality rate among children from households without running water or a toilet is twice as high as that of children from households with these facilities. In the province of KwaZulu-Natal, South Africa, which has an antenatal HIV seroprevalence rate of more than 40% in some areas, a cholera epidemic affected at least 40 000 people during 6 months in 2000. In conditions like these, replacement feeding is unlikely to be a safer option than breast-feeding until there are major social reforms[1]. Furthermore, in South Africa the preparation of commercial infant formula can be extremely difficult in rural settings. One study investigated the feasibility of preparing safe and hygienic commercial infant formula in rural KwaZulu-Natal, and found that availability of water, fuel and time for preparing formula are difficulties faced by most of the women[36]. If an HIV-infected woman (or an uninfected woman, for that matter) chooses to formula-feed her infant, UNAIDS guidelines currently encourage routines to improve sanitary preparation, including: washing of hands with soap and water prior to formula preparation; boiling of water used in the preparation; keeping food preparation

areas clean; giving the formula in a cup rather than a bottle; cleaning the cup and mixing bowl with soap and water or by boiling; and giving the unused formula to an older child rather than saving it for later. For safe formula-feeding to be feasible, it is imperative that the women who prepare formula should strictly adhere to all the UNAIDS guidelines, that is implementing only one or two of the several guidelines correctly does not make it feasible[36].

At a PMTCT site in Durban, South Africa, infant feeding counselling included the importance of food hygiene (always washing hands after toilet visits and changing nappies, and before food preparation and feeding the infant; keeping utensils and feeding areas clean; safe boiled water and safe storage of food); extra costs involved with formula-feeding (fuel, sterilizing methods) required over and above the formula which the mothers would receive free of charge; cup feeding versus bottle feeding; the preparation of milk feeds; storage of prepared milk feeds and handling of left over feeds. The women in the study had 12 years education or more- (a high standard for the African setting), but despite the fact that these women understood and followed the above-mentioned recommended methods of preparation and cleaning, many still had to contend with contaminated formula milk. Most feeds had been prepared long before the infant had completed drinking the feed and some infants drank milk prepared half a day or more before consumption[37]. The study suggests that, whilst mothers seem to understand and follow the instructions on cleanliness and hygiene when they have adequate facilities, the advice and education given to mothers by the health care workers could be less than adequate[37].

1.2.1.4. Wet-nursing and breast milk banks

According to the South African Breast-Feeding Guidelines for Health Care Workers there is a need for cautionary measures to be instituted before wet-nursing is widely practiced[28] in the context of HIV. In some settings there is a tradition of wet-nursing in the family context, with a relative breast-feeding an infant. However, there is a risk of HIV transmission to the infant through breast-feeding if the wet-nurse is HIV-infected. There

is also a potential risk of transmission of HIV from the infant to the wet-nurse, especially if she has cracked nipples[38]. Wet-nursing is a fairly common phenomenon in rural areas of South Africa, but is usually discouraged because of the high prevalence of HIV[39]. Wet-nursing should be considered only when, the potential wet-nurse is informed of her risk of acquiring HIV from the infant of the HIV-infected mother; the wet-nurse has been offered HIV counselling and testing, voluntarily takes a test, and is found to be HIV-uninfected; the wet-nurse is provided with adequate information; and is able to practise safer sex to ensure that she remains HIV-uninfected while she is wet-nursing the infant; wet-nursing takes place in a family context and there is no payment involved; the wet-nurse can breast-feed the infant as frequently and for as long as needed; and the wet-nurse has access to breast-feeding support to prevent and treat breast-feeding problems such as cracked nipples[38].

In some settings breast milk is available from breast milk banks[38]. Breast milk banks grew in number as the practice of wet-nursing dwindled early in the twentieth century[40]. Probably the first breast milk bank in the United States was started in 1911, and in 1943 the American Academy of Pediatrics published its first recommendations for operating breast milk banks. By 1959 there were over 100 breast milk banks in Germany alone, but with the aggressive marketing of infant formula, and especially since the onset of the AIDS epidemic, the number of breast milk banks has declined[41]. Breast milk banks are generally used as a source of breast milk for a short period of time, for example for sick and low birth weight newborns. Breast milk banks are not usually an option for meeting the nutritional needs of infants over a long period[38]. In South Africa only three breast milk banks exist. These breast milk banks provide milk for AIDS orphans and abandoned infants. Breast milk banks are feasible, but involvement of and funding by the government is essential[39], because huge financial outlay is required for the transportation, testing, pasteurisation and storage of pooled breast milk. This financial requirement is a major obstacle in most developing countries[42]. Any excess milk from the breast milk bank in Durban is quickly snapped up by other AIDS orphanages and homes, indicating the need for donor milk. The organisation Aid Babies Battling AIDS (ABBA) in the Eastern Cape, South Africa, claims that in a "best case scenario" with nevirapine

universally administered, 8500 infants would be born HIV- uninfected in South Africa, one third of whom would subsequently become infected via ordinary breast milk. In such a case, providing milk from breast milk banks would save the lives of nearly 3 000 infants per year or around 250 infants per month[43]. Given the risk of HIV transmission through unpasteurised pooled breast milk from unscreened donors, breast milk banks should be considered as an option only when they are already established and functioning in accordance with standard procedures and safety precautions, and when it is certain that donors are screened for HIV and that the donated milk is correctly pasteurised[38]. Acceptance of the donated breast milk by some mothers might be a problem, as was found in a study in Jos, Nigeria, which determined the attitude of mothers towards donated breast milk. This study found that mothers generally resisted donated milk for their infants. The main sited reasons for not wanting to accept donor milk in this study was fear of transmission of diseases or poor hygiene of donors. Other reasons for not wanting to accept donor milk reflected socio-cultural and religious beliefs[42].

1.3. PREVENTION OF MOTHER-TO-CHILD TRANSMISSION IN SOUTH AFRICA

The PMTCT Programme was launched at 18 pilot sites throughout South Africa during 2001[44] (Appendix A). In the Province of Mpumalanga, South Africa, 2 pilot sites were chosen, namely Shongwe Hospital (including 9 surrounding clinics) and Evander Hospital (including 1 clinic and a Community Health Centre [CHC])[44]. The roll-out strategy of the PMTCT Programme in the Province has 3 phases: Phase 1 includes the major referral hospitals, Phase 2 includes all the remaining hospitals in the province and Phase 3 includes all health centres and clinics offering antenatal care and perinatal care[45].

The PMTCT Programme involves four stages of counselling (Figure 1.1) in relation to HIV[46]:

Stage 1: Pre-test counselling regarding the risk of exposure to HIV, implications of knowing one's HIV status and the need to make an informed decision whether or not to be tested. The counselling and testing must be voluntary and confidential.

Stage 2: Post-test counselling where the number of sessions will depend on the results.

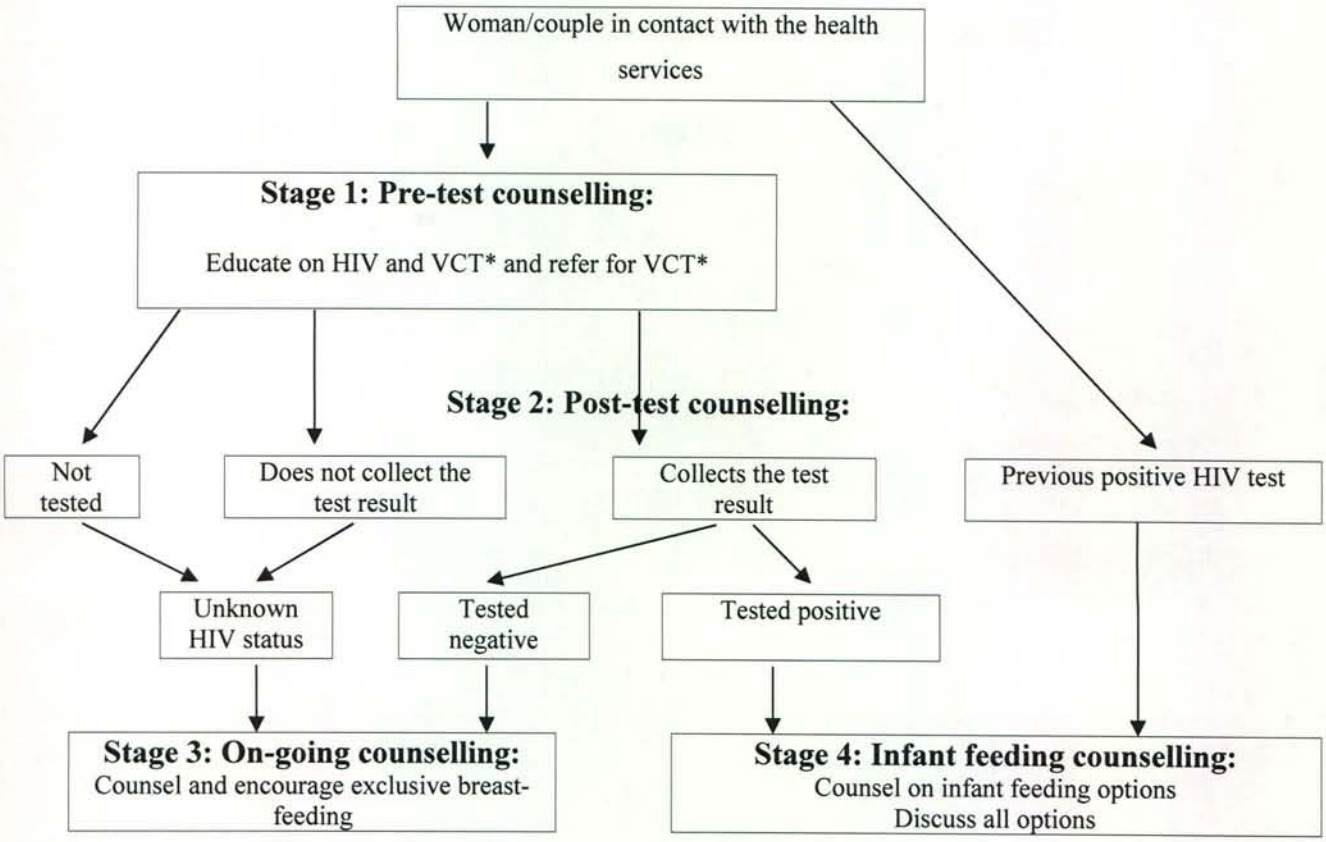
When the **result is negative**, the counsellor must discuss ways and means to avoid HIV infection and encourage exclusive breast-feeding.

When the **result is positive**, the counsellor must discuss the woman's concerns regarding her status and provide information, support and referral to other services which she may need, such as medical care, follow-up care for her infant and community support services.

Stage 3: On-going counselling which will help the woman/couple to discuss questions and difficulties she/they may not have been able to resolve. She must be helped to cope with her situation, to obtain more information and to make decisions about all aspects of her life.

Stage 4: Infant feeding counselling is initiated when a woman has accepted her result and is ready to discuss infant feeding options (Figure 1.2).

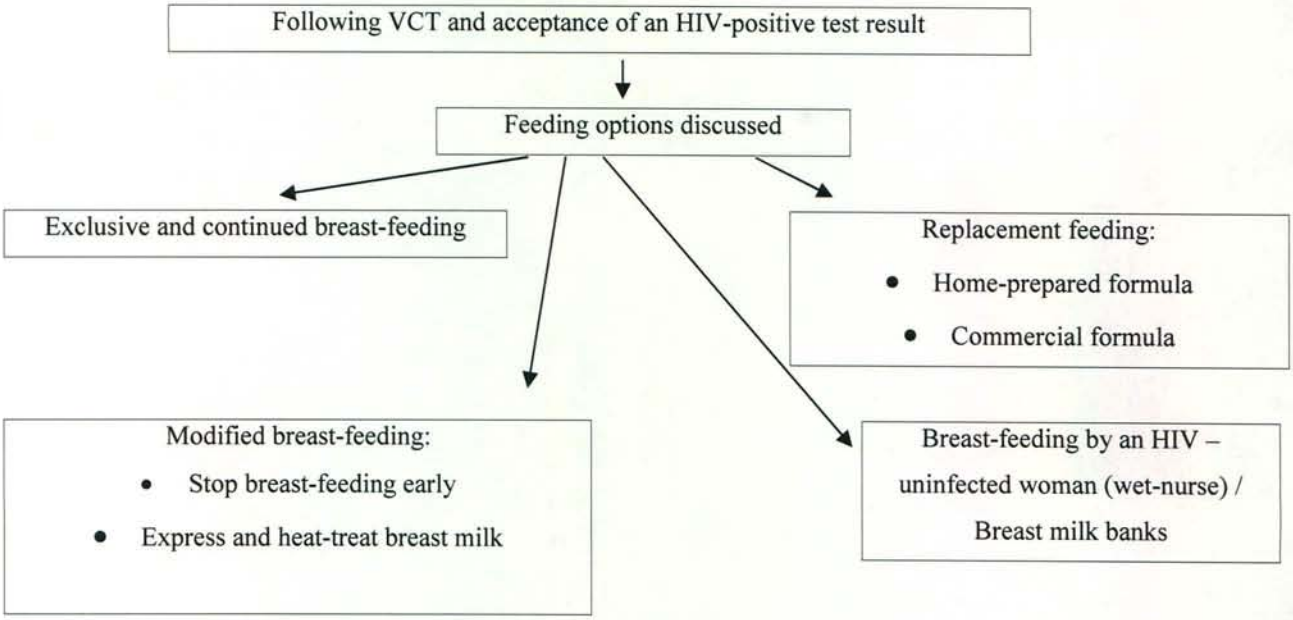
For the purpose of this study specific attention will be given to Stage 4 counselling, namely **infant feeding counselling and decision making/taking**.



***VCT – Voluntary counselling and testing**

Figure 1.1: Algorithm for counselling of infant feeding decisions in South Africa

Source: WHO/UNAIDS/UNICEF, 2000; 15



Adequate complementary foods from 6 months of age will be needed for all children.

Figure 1.2: Infant feeding options discussed during counselling
Source: WHO/UNAIDS/UNICEF, 2000; 16

1.4. MOTIVATION FOR AND SIGNIFICANCE OF THE STUDY

Infant feeding options in the context of HIV/AIDS remains a difficult issue. Breast-feeding remains the best first food for an infant, with extensive benefits which no breast milk substitute can live up to, but the fact remains that transmission of the HIV-1 virus does occur through breast-feeding[5].

Literature regarding exclusive breast-feeding rates in South Africa is limited, but those available and relying on anecdotal experience, show that in the African setting exclusive breast-feeding is very rare. Mothers may initiate exclusive breast-feeding, but usually exclusive breast-feeding changes to mixed-feeding within a month. Nationwide breast-feeding promotion campaigns may not necessarily improve rates of exclusive breast-feeding[19]. The health care worker who counsels the mother in the session on infant feeding options is responsible for informing her about all the advantages and

disadvantages of breast-feeding and this is most likely the only time when the mother will be able to obtain such information. The difficulty is that breast-feeding promotion is extremely difficult and resource-demanding[47]. Not only should the health care workers be trained, re-trained and make this field their specialty, but the mothers also need repeated educational sessions. Where practical support is available, exclusive breast-feeding is an acceptable and feasible feeding option for many HIV-infected women[30]. Furthermore, in order to advise HIV-infected mothers and optimise maternal and child health it is important that health care workers have a clear understanding of the science behind the transmission of HIV and other infectious diseases through breast milk[24] . HIV counsellors and physicians should possess the most up-to-date information on infant feeding options in order to inform their patients accurately, because most women, who change their minds about their chosen feeding option do so because of the advice of a doctor or a family member[14]. It is therefore a matter of great concern that anecdotal reports and small research studies have suggested that physicians are ill prepared to offer breast-feeding support[48].

On the other hand, the best way to avoid post-natal MTCT is to avoid breast-feeding and provide the infant with commercial infant formula as an alternative. As discussed earlier, the only situation where formula-feeding will be appropriate, is when the mother has sustainable sources of adequate formula, safe water and fuel at her disposal and possesses the necessary skills in preparing the formula. This assumption would appear to be rather simplistic since a number of studies have identified inappropriate preparation of replacement feeding as a cause of health hazards. In an attempt to prevent the latter, adequate instructions for safe preparation must be provided by health care workers, with close follow-up of the infant[37]. Infant feeding involves many critical steps during handling, storage, preparation and cleaning, with great demands on good hygienic practices. Health care workers should give the mothers clear instructions not only on how to prepare the formula milk, but also on the period of time that may elapse between preparation and consumption of non-refrigerated milk; on how to use leftovers; that a cloth must never be used in the cleaning process; and, very importantly that a feeding cup ought to be used instead of a feeding bottle[37].

International guidelines recommend that HIV-infected women should be given the information to make an informed decision about the risks and benefits of breast-feeding and replacement feeding and that they should be supported in their decision[3], but counselling on both infant feeding options requires expertise and a great deal of time. With the use of rapid same-day HIV testing and results, HIV counsellors are often responsible for providing pre- and post-test counselling in one day. Post-test counselling, which includes counselling on infant feeding options, can only be done on an individual basis, placing a tremendous work burden and time pressure on the counsellors. High quality individualized counselling may therefore be difficult to accomplish[49].

This study was therefore unique in proposing to investigate, several factors which may influence the concept of informed decision on which little or no evidence is currently available.

The WHO, the UNICEF and the UNAIDS agree on the concept of informed decision – meaning that mothers should be free to choose the method of infant feeding, but to do so, must be fully informed of all the benefits and risks. Guidance for the mother should include not only scientific data, but also suggestions on how to think through the issues involved. This, of course, requires that the mother be in possession of as much scientific and medical information as possible. Mothers cannot be expected to make responsible, informed decisions otherwise[50].

The results of the present study may therefore not only contribute to identifying problem areas within the PMTCT Programme with regard to infant feeding option counselling, but may also serve as baseline information for improving the programme. The goal is to render a better service to pregnant women, regardless of whether they are HIV-uninfected or -infected, and ultimately to their unborn children.

CHAPTER 2

METHODOLOGY

2.1. STUDY AIMS

The aim of this study was to determine how "informed" is the literate mother's decision regarding infant feeding options, who are participating in the PMTCT Programme, in the Gert Sibande District, Mpumalanga Province, South Africa.

The objectives of this study were to:

1. Determine the knowledge, personal preference and attitude of health care workers, in relation to the mother's ability to make an informed decision about infant feeding options.

2. Determine the resources available to the health care workers, in relation to the mother's ability to make an informed decision about infant feeding options.

3. Determine the mother's experience regarding infant feeding options both in the counselling session with the health care worker and in the community.

2.2. STUDY DESIGN

2.2.1. Type of study

A cross-sectional, descriptive study design was followed.

2.3. SAMPLING

2.3.1. Sampling method

The Mpumalanga Province, one of the nine provinces of South Africa, consists of three districts namely the Ehlanzeni, the Nkangala and the Gert Sibande District (Appendix B). The study was conducted only in the Gert Sibande District (Appendix C).

The two sampling frames chosen were convenience samples:

1. Sampling frame for health care workers: This frame included only health care workers working at PMTCT sites (refer to Table 2.1) in the Gert Sibande District, who had implemented the PMTCT Programme at these sites, had attended the 5-day PMTCT training course (Appendix D) presented by Trainers of Trainers (TOT) representing the Directorate: HIV/AIDS, Mpumalanga, Department of Health, were actively involved in the counselling sessions with the mothers and who worked day shifts during the study period. Those health care workers who worked at hospitals and clinics in the Gert Sibande District who had not implemented the PMTCT Programme at that specific site, had not attended the 5-day PMTCT training course and/or worked night shifts (counselling mainly takes place during the day) were excluded from the study.

Each PMTCT site in the Gert Sibande District was telephonically contacted by the investigator who identified a PMTCT site manager (Appendix E). The PMTCT site manager was the sole provider of the particulars of the health care workers at that specific site who could be included in the study.

2. Sampling frame for mothers: This frame included only mothers who were aware of their HIV status, were already enrolled in the PMTCT Programme and attended follow-up visits, as well as mothers who were enrolled in the PMTCT Programme during the data collection period. Mothers had to be literate. To avoid recall error[51], mothers whose youngest child was older than 4 months were excluded to ensure that the mothers would still be able to clearly remember the infant feeding counselling provided.

The PMTCT site manager at each site was responsible for enrolling the mothers in the study.

2.4. DATA COLLECTION

2.4.1. Demography

The hospitals and clinics which were included in the study are listed in Table 2.1.

Table 2.1: Hospitals and clinics in the Gert Sibande district included in the study, by municipal area

Municipal area	Hospital(s)	Clinic(s) / Community Health Centres (CHC)
Mkhondo	Piet Retief Hospital	Driefontein CHC Amsterdam Clinic
Albert Luthuli	Embhuleni Hospital	Tjakastad Clinic
Seme	Amajuba Hospital	Amersfoort Clinic Daggakraal Clinic Perdekop Clinic Volksrust Clinic
Lekwa & Dipaleseng	Standerton Hospital	Standerton Clinic Siyathemba Clinic Nthoroane Clinic
Highveld East	Evander Hospital	Embalenhle CHC Lebaong CHC
	Bethal Hospital	Mzinoni Clinic
Msukaligwa	Ermelo Hospital	Emthonjeni Clinic Ermelo TLC Tusiville Clinic

2.4.2. Instructions to the field workers

The dietitian / community service dietitian / nutrition coordinator at each of the above-mentioned hospitals (n = 6) attended an information session led by the investigator in Middelburg on 11 May 2004. (The investigator was responsible for data collection in her respective municipal area).

The aims of the information session were as follows:

1. To inform the field workers about the research project which would be conducted in the Gert Sibande District
2. To explain the aim and objectives of the research to the field workers
3. To explain the responsibilities of each field worker
4. To explain the inclusion and exclusion criteria of possible participants
5. To explain how the consent form should be completed by anyone who participated in the study
6. To go through the questionnaires
7. To provide ample time for questions by the field workers

The field workers' responsibilities can be summarised as follows:

1. The field workers had to approach each health care worker listed in their respective area and explain the aim and objectives of the research to the health care worker during the data collection period. Once the health care worker had voluntarily agreed to participate in the study, the field worker had to give the health care worker an option regarding the language (English, Zulu or Afrikaans) in which the health care worker preferred to complete the questionnaire. Thereafter the consent form had to be completed by the health care worker and the field worker. The field worker had to be present while the health care worker completed the questionnaire. Field workers could either visit each health care worker separately or organise a group of health care workers that could complete the questionnaires simultaneously. Field workers had to make sure that the health

care workers did not discuss the questionnaire with each other or look up any answers to questions regarding knowledge in a text book or manual. If the health care workers had any questions regarding the questionnaire, the field worker had to phone the investigator, who would then clarify the problem.

2. The field worker had to provide a reason for every health care worker listed in her respective area who had not participated in the study.
3. At the end of the data collection period all completed questionnaires had to be placed in a courier bag provided by the investigator and returned to the investigator. The courier bag had a maximum capacity of 1 kg. If the completed questionnaires weighed more than 1 kg, the field worker had to inform the investigator, who would then post another courier bag to the field worker. The research was to have no costs implications whatsoever for the field workers and the field workers were not expected to buy anything for the research themselves.
4. Each field worker had to hand the mothers' questionnaires to the PMTCT site manager at each PMTCT site in their respective area. The field worker had to confirm that the PMTCT site manager understood the data collection regarding the mothers as explained to the PMTCT site manager telephonically by the investigator. Field workers had to explain to the PMTCT site managers how the consent form should be completed and review the inclusion criteria for the mothers.

The investigator explained the inclusion and exclusion criteria of possible participants in the study to the field workers and went through the questionnaires designated for both the health care workers and the mothers. Each field worker was given ample time to ask any questions.

The investigator phoned each PMTCT site manager, and the aims of the telephone conversation were the same as for the field workers' information session, the only difference being the section on the responsibilities of the PMTCT site managers, which can be summarised as follows:

1. Each PMTCT site manager, or a PMTCT counsellor in the facility appointed by the PMTCT site manager, was responsible for approaching mothers on the PMTCT Programme and explain the aim and objectives of the research to the mothers during the data collection period. Once the mother had voluntarily agreed to participate in the study, the PMTCT site manager had to give the mother an option regarding the language (English or Zulu) in which the mother preferred to complete the questionnaire. Thereafter the consent form had to be completed by the mother and the PMTCT site manager. The PMTCT site manager had to be present while the mother completed the questionnaire. PMTCT site managers had to return the completed questionnaires to the investigator in the same manner as the field workers.

2.4.3. Distribution of the questionnaires

On 17 June 2004 a package was sent per courier to each of the 6 field workers in the different municipal areas. Each package contained the following:

1. For the field workers:

- a list of names of the health care workers in that area who had to be asked to participate in the research
- copies of the necessary approval documentation (Appendices F–H) for the research project
- the questionnaires for the health care workers
- envelopes and a courier bag

2. For the PMTCT manager:

- copies of the necessary approval documentation for the research project
- the questionnaires for the mothers
- envelopes and a courier bag

These packages reached each of the 6 field workers on Friday 18 June 2004 and they were given one week (18-25 June 2004) to deliver the packages to the PMTCT site managers in their respective areas.

The investigator was responsible for approaching health care workers in her own municipal area to participate in the study and to deliver the questionnaires for the mothers to the PMTCT site managers in her municipal area.

2.4.4. Data collection regarding the health care workers

One month (21 June-21 July 2004) was allocated for data collection regarding the health care workers. During this time the investigator contacted each of the 6 field workers from the different municipal areas weekly, to assess the progress of data collection.

2.4.4.1. Questionnaire description

Data collection on the defined aspects of the PMTCT Programme regarding the health care workers was achieved by means of a once-off self-administered questionnaire (Appendix I) available in English, Afrikaans and Zulu. Zulu is the most widely spoken language in the district where the research was conducted. The services of Professor Danie Jordaan, Director: School of Language, Media and Communication, University of Port Elizabeth, were used for the translation of all the questionnaires and consent forms into Zulu and Afrikaans. Accuracy of the translation was assured by the translator, who back-translated the questionnaire to the original language to ensure that no discrepancies had occurred. Health care workers in the pilot study were asked to indicate if any language editing of the Zulu and Afrikaans versions of the questionnaires were needed. No health care worker indicated that the translation was inadequate in any way.

The questionnaire was divided in 5 sections:

Section A – General information

Comprised 9 questions aimed at gathering background information on the health care workers.

Section B – Attitude of the health care workers towards the PMTCT Programme

Contained 9 attitude questions: Questions 1 to 7 used a 4-point Likert scale to determine the attitude of the health care workers towards the PMTCT Programme. The Likert scale was used to determine attitude because it is a quick and cost-effective way to analyse data and the time constraint did not allow for the processing of open ended questions. The 4-point Likert scale has the advantage that the participant has to take a stand, as oppose to the 5-point Likert scale where the participant can stay neutral[52]. Questions 8 and 9 were aimed at determining possible reasons why the PMTCT Programme might not be practical/achievable in the health care worker's working environment and what could be done to correct this.

Section C – Personal preference of health care workers towards infant feeding options

Consisted of 10 questions and was aimed at determining whether or not health care workers had a personal preference towards infant feeding and whether this preference influenced the mother's decision of infant feeding options.

Section D – Resources

Comprised 5 questions: Question 1 was designed to determine whether the health care worker had enough time available, in her/his facility, to spend quality time with a mother to explain infant feeding options. Question 2 was aimed at determining whether the resources (feeding option cards) provided to the health care worker during the PMTCT training course were being used during counselling sessions. Question 3 was aimed at determining whether and what type of educational resources were needed by health care workers to explain breast-feeding to the mother. Question 4 was designed to determine

whether the preparation of a formula was demonstrated to the mother and whether the mother was given an opportunity to prepare the formula herself and, if not, for what the reason(s). Question 5 was aimed at determining the type of resources which were available in the facility to explain formula-feeding to the mother.

Section E – Knowledge of the health care workers regarding breast-feeding and formula-feeding

Comprised 10 questions: Questions 1 to 7 were designed to determine whether the health care worker possessed the necessary knowledge of breast-feeding which was critical to an HIV-infected mother in order to reduce the risk of transmission to her infant, and questions 8 to 10 were designed to determine whether the health care worker possessed the necessary knowledge of formula-feeding which would be critical in her explanation to the HIV-infected mother (and any other mother who chooses to formula-feed her infant) in order to prevent malnutrition and diarrhoea, known to be common in formula-fed infants.

2.4.5. Data collection regarding the mothers

One month (28 June-28 July 2004) was allocated for data collection regarding the mothers. During the first week of data collection, the investigator phoned each PMTCT site to make sure that they had received the research material and answered any questions which the PMTCT site manager might have had. During the month of data collection for the mothers, the investigator phoned the PMTCT sites weekly to assess the progress of data collection.

2.4.5.1. Questionnaire description

The data collection regarding the mothers was done by means of a once-off self-administered questionnaire (Appendix J), available in English, Afrikaans and Zulu. (The mothers in the sample could complete the questionnaire in their home language).

The questionnaire comprised 9 questions: Questions 1 to 7 were aimed at determining whether the mother had been influenced by anyone in her community or the health care worker (who counselled her on infant feeding options) with regard to the decision of infant feeding. Question 8 included an additional 4 sub-questions which were directed at mothers who had breast-fed or were still breast-feeding their infants, and question 9 included an additional 13 sub-questions which were directed at mothers who were formula-feeding their infants. Mothers were instructed to complete both question 8 and question 9 if they were mixed-feeding their infants.

2.5. ETHICS

The project was approved by the Ethics Committee of the Faculty of Health Sciences, Stellenbosch University, Tygerberg, South Africa (Project number: N04/03/050) (Appendix F), as well as by the Ethics Committee of the Department of Health, Mpumalanga, South Africa, (Appendix G). Approval to conduct the study in the Gert Sibande District was obtained from the Director of the Gert Sibande District, Mrs. N. Mtsweni (Appendix H).

Confidentiality was ensured throughout the study. The identity of the health care workers and the mothers was omitted from study-related material to ensure participant confidentiality. Each participant received a subject number, which was used on all study-related material and documentation. This subject number could only be related to the participant by the investigator and the participant him/herself. Each participant who took part in the study had to complete a Participant Information Record form (Appendix K). This form included contact details of the participant to be used by the investigator only if any of the information given by the participant was unclear or incomplete.

All costs incurred in the execution of the study were covered by the investigator, who received a fellowship grant from the WHO. The subjects and staff involved in the study did not receive any incentives or remuneration.

2.5.1. Written consent

Each participant, whether a health care worker or a mother, was provided with an informed consent form (Appendix L) by the investigator / field worker / PMTCT site manager. An adapted consent form was utilised, based on the standard informed consent form used by the Faculty of Health Sciences, Stellenbosch University. The consent form was available in English, Afrikaans and Zulu. The procedure was explained to each participant in the participant's home language.

2.6. PILOT STUDY

The investigator conducted a pilot study to test the questionnaires after ethics approval from the Department of Health, Mpumalanga had been received on 25 May 2004. Since the research was to take place in the Gert Sibande District, it was decided to conduct the pilot study in the other two districts, namely the Ehlanzeni District and the Nkangala District. The pilot study in the Ehlanzeni District took place on 1 June 2004 at Barberton Hospital and on 2 June 2004 at Shongwe Hospital and surrounding clinics. Since the number of participants who could be found to take part was insufficient, a second pilot study was undertaken in the Nkangala District on 9 June 2004 at Waterval Boven Hospital and surrounding clinics.

The purpose of the pilot study was to test the questionnaires for both the health care workers and the mothers to ensure that the questions were understood. Eleven health care workers and 6 mothers took part in the pilot study. It took an average of 8 minutes for the health care workers to complete the consent form and an average of 30 minutes to complete the questionnaire. The mothers took an average of 13 minutes to complete the consent form and an average of 23 minutes to complete the questionnaire. Three changes had to be made to the questionnaire for health care workers, namely:

1. In Section C, Question 2: the category "both" had to be added to the given options. Some health care workers commented that they did not only breast-feed

or formula-feed their infants, but also both breast-fed and formula-fed their infants;

2. In Section D, Question 4.1 and 4.3 the word "sometimes" had to be added to the given options. All the health care workers commented that demonstrations were given sometimes and not all the time or never;
3. In Section E, which tested the knowledge of the health care workers, "choose only one answer per question" had to be added at the beginning of the section, because health care workers chose more than one answer per question, which was incorrect.

The mothers understood the questionnaires very well in both English and Zulu and the only clarification that was asked for by the mothers was between questions 8 and 9. Question 8 had to be completed by mothers who breast-fed their infants and question 9 by mothers who formula-fed their infants, while both questions had to be answered if they were both breast-feeding and formula-feeding their infants. Therefore these instructions were added to the questionnaire in a clearly marked block above question 8.

2.7. ANALYSIS OF DATA

2.7.1. Statistical analysis

The investigator captured data electronically with Microsoft Excel®. Precision of data transfer was ensured by double checking data entries. Tables and graphs were used to present data and descriptive statistics were used to analyse data.

The Pearson Chi Square Test was used to test categorical variables against each other. The One-Way Analysis of Variance (ANOVA) Test was used to test continuous variables with categorical variables. A p-value of ≤ 0.05 was used throughout to indicate a significant association or difference. The residue for each ANOVA that indicated a significant association was investigated to determine whether it was distributed normally,

and in case of any uncertainty a non-parametric test, for example the Kruskal-Wallis Test or the Mann-Whitney Test was used to confirm or refute the result of the ANOVA Test.

CHAPTER 3

RESULTS

3.1. DESCRIPTION OF THE SAMPLE

3.1.1. Hospitals and Clinics

Two PMTCT sites, selected in the original sample (Vukuzakhe Clinic and Sead Clinic) were excluded for operational reasons (one PMTCT counsellor was on maternity leave and another had emigrated and the HIV-infected mothers attending these clinics were transferred to other clinics). The Driefontein Community Health Centre was included in the study, because health care workers had been trained on PMTCT in the interim, and PMTCT had been implemented at the CHC. In the final sample of hospitals and clinics included in the study (Table 2.1) only one (Bethal Hospital) had obtained the Baby Friendly Hospital Initiative Status. All identified health care workers and mothers from all the municipal areas in the Gert Sibande District participated in the study.

The findings of the study, is presented for the total sample and not individually for hospitals and/or clinics, because the total available sample per hospital/clinic did not allow for meaningful statistical analysis. For findings that were statistically meaningful in relation to the municipal areas, refer to Appendix M.

3.2. THE FINDINGS

3.2.1. Health care workers

3.2.1.1. Socio-demographic profile of the health care workers

According to the research protocol 45 health care workers met the inclusion criteria and were expected to participate in the study. Due to the time lapse between the compilation of the protocol and the start of the research project, more health care workers completed the 5-day PMTCT training course. By the time the study was implemented 72 health care

workers met the inclusion criteria and were forthwith included in the study. During the data collection period another two health care workers who met the inclusion criteria were identified, bringing the final number of health care workers expected to participate in the study to 74.

Of these 74 health care workers only 58 participated in the study. Of the 16 health care workers who did not participate in the study three refused consent, two were transferred from day to night duty, four were incorrectly identified as having completed the PMTCT course but had actually only done the VCT course, five were on leave during the month of data collection and one was stationed at a rural clinic which the field worker could not reach.

Of the 58 health care workers who participated in the study four had to be subsequently excluded since their completed questionnaires had been misplaced by a PMTCT site manager. These four excluded health care workers were all from the same municipal area, which meant that this specific municipal area (Albert Luthuli) was not represented in the study. Therefore the investigator visited the specific PMTCT site to trace the questionnaires or to find the health care workers whose questionnaires had been misplaced in order for them to complete the questionnaires a second time. Three of the health care workers were traced and completed the questionnaire, but the fourth health care worker was on leave and could not be reached. Re-administering the questionnaire to these three health care workers was unlikely to have biased the data seeing that they only represented five percent of the sample. In total, therefore, 57 health care workers were included in the study (Figure 3.1).

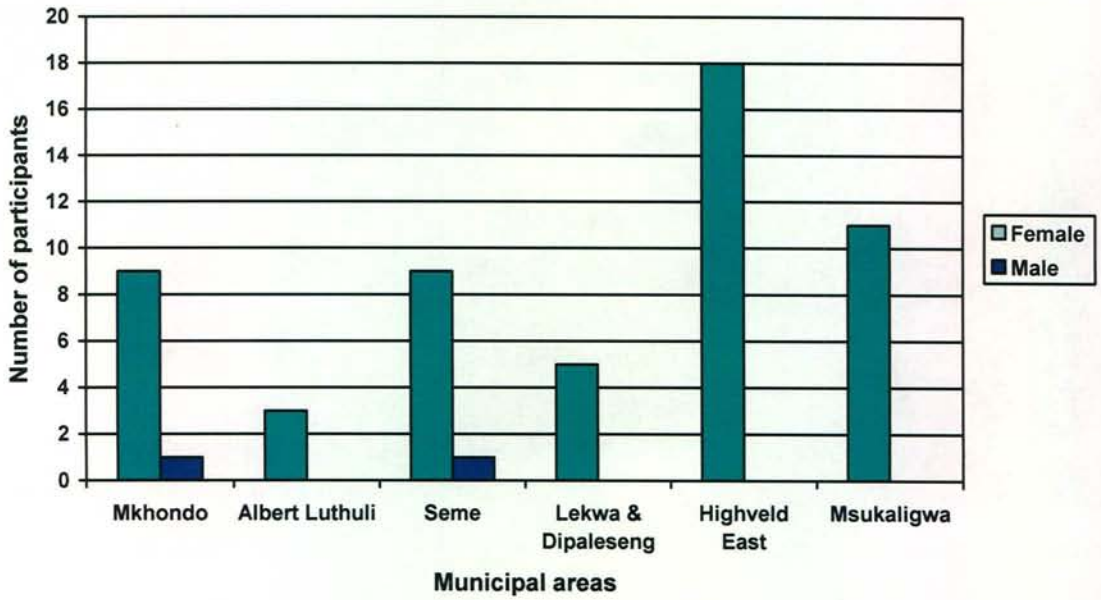


Figure 3.1: Municipal and gender distribution of health care workers in the sample (n = 57)

The youngest participating health care worker in the study was 23 years old and the oldest was 59 years old. The mean age of the health care workers in the sample was 42 years with a standard deviation (SD) of 10.01. The majority of the participants were equally distributed in the age groups 25-34, 35-44 and 45-54 years (Figure 3.2).

Health care workers who participated in the study were qualified as enrolled nurse assistants, nurse assistants, professional nurses, senior professional nurses, chief professional nurses and lay counsellors (Appendix M: Table 3.1).

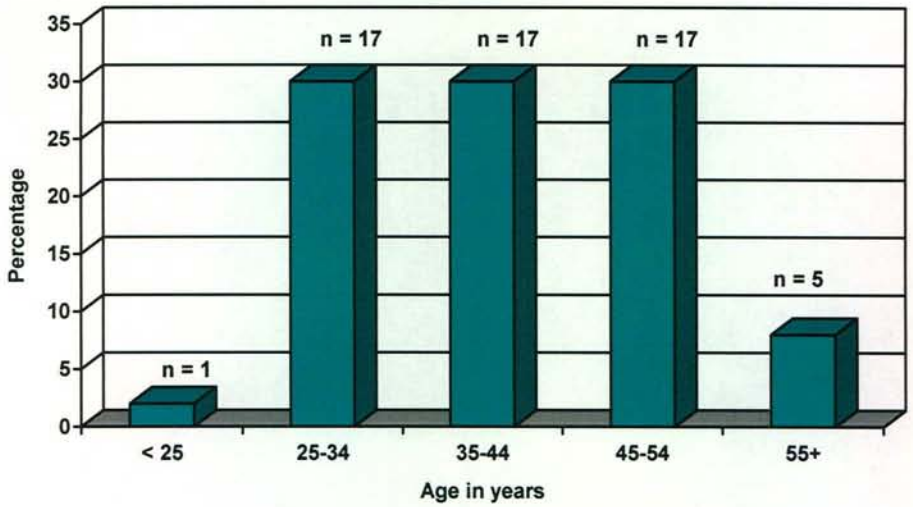


Figure 3.2: The percentage distribution of health care workers in the sample by age (n = 57)

Although all the health care workers had completed the PMTCT training course (5% in 2001; 32% in 2002; 49% in 2003 and 14% in 2004), only 25% (14) had completed the 18-hour lactation management course and 70% (40) had completed the voluntary counselling and testing course (Figure 3.3).

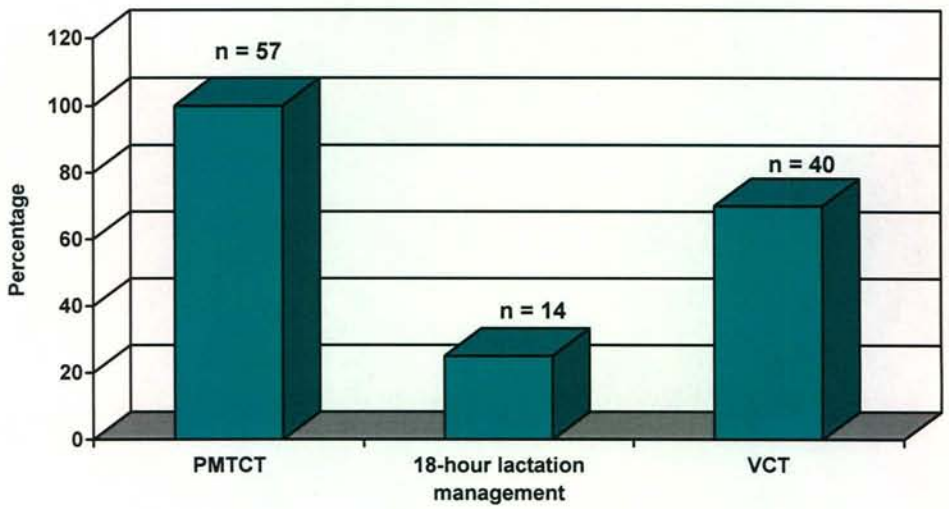


Figure 3.3: Percentage distribution of health care workers in the sample who completed training courses relevant to the PMTCT Programme (n = 57)

The number of mothers counselled by each category of health care workers, with regard to PMTCT ranged from 0-10 mothers per week (Appendix M: Table 3.2).

3.2.1.2. Attitude of the health care workers towards the PMTCT Programme

Although all socio-demographic variables were tested for associations against all other variables in the study, only significant associations or differences are reported in the thesis.

The attitude of the health care workers towards the PMTCT Programme was positive, with most of them either agreeing or strongly agreeing with the statements contained in the questionnaire (Table 3.1). The eight participants (15%) who did not agree with the statement that what was expected of them was practical and/or achievable, indicated three main reasons why they felt that it was not practical and/or achievable (Table 3.2).

When asked what in their opinion would make the expectations of the programme more practical and/or achievable, not only the eight health care workers who disagreed with this statement, but also some health care workers who agreed, offered suggestions on how the programme could be made more practical or achievable (Table 3.3).

Table 3.1: Percentage distribution of the health care workers' attitude towards the PMTCT Programme (n = 57)

Statements contained in the questionnaire	n (%)			
	Strongly Disagree	**Disagree**	**Agree**	**Strongly Agree**
The PMTCT Programme, in general and with regard to infant feeding option counselling, is a good programme.	0 (0)	0 (0)	25 (44)	32 (56)
The 5-day PMTCT course enables the health care worker to provide the mother with sufficient information to be able to make an informed decision related to infant feeding options.	0 (0)	0 (0)	20 (35)	37 (65)
The 5-day PMTCT course equips the health care worker with enough skills to be able to communicate with the mother in such a manner that the decision the mother makes regarding infant feeding options will not be influenced.	1 (2)	2 (4)	21 (37)	33 (57)
The 5-day PMTCT course expects of the health care worker to counsel the mother on the advantages and disadvantages of both breast-feeding and formula-feeding without influencing the decision of the mother in any way.	0 (0)	1 (2)	23 (40)	33 (58)
The 5-day PMTCT course expects of the health care worker to support the mother in whatever option she chooses.	0 (0)	0 (0)	26 (46)	31 (54)
The 5-day PMTCT course expects of the health care worker to educate the mother on the decision that she has made, that is how to breast- or formula-feed.	0 (0)	0 (0)	19 (33)	38 (67)
What is expected of the health care workers is practical and/or achievable in their working environment.	2 (4)	6 (10)	31 (54)	18 (32)

Table 3.2: Reasons why health care workers felt that what was expected of them by the PMTCT Programme was not practical and/or achievable in their working environment (n = 8)

Reasons	n (%)
1. **Not enough resources** (staff, space, time and equipment)	8 (100)
2. **Rotation to different departments** (trained PMTCT counsellor may end up in a department where these skills cannot be used)	3 (38)
3. **Not allocated for counselling only** (the PMTCT Programme is an extra, added onto the already overwhelming number of duties)	2 (25)

Table 3.3: Suggestions by health care workers in the sample to make the expectations of the PMTCT Programme more practical and/or achievable (n = 21)

Suggestions	n (%)[1]
1. More resources:	
More trained staff/PMTCT counsellors	15 (71)
Space specifically allocated for PMTCT	4 (19)
Time and equipment	3 (14)
Transport for home visits	1 (5)
2. To form support groups	2 (9,5)
3. To be allocated only for PMTCT counselling	2 (9,5)
4. Sensitizing mothers on PMTCT	2 (9,5)
5. Not to be rotated between departments	1 (5)
6. Don't give free formula	1 (5)
7. Disclosure of HIV status should be encouraged	1 (5)
8. Peer educators to be involved	1 (5)
9. Ensure mother is well informed and cared for	1 (5)

[1] Percentages does not add up to one hundred percent as some health care workers made more than one suggestion

The Pearson Chi Square Test revealed significant differences between several socio-demographic variables and the attitude of the health care workers towards the PMTCT Programme (Table 3.4). Lay counsellors and chief professional nurses mostly agreed or strongly agreed (respectively) that the PMTCT Programme was a good programme ($p = 0.032$) and that the course equipped the health care worker with enough skills to communicate with the mother in such a manner that the decision she made regarding infant feeding options would not be influenced ($p = 0.000$) when compared with health care workers who did not have the correct communication skills. Health care workers who had obtained their qualification between 1995-2004 strongly agreed that the course equipped the health care worker with enough skills to communicate with the mother in such a manner that the decision she made with regard to infant feeding options would not be influenced ($p = 0.003$) and that the 5-day PMTCT course expected the health care worker to counsel the mother on the advantages and disadvantages of both breast-feeding and formula-feeding without influencing the decision of the mother in any way ($p = 0.005$). Health care workers who had completed the VCT course felt that the 5-day PMTCT course enabled the health care worker to provide the mother with sufficient information to be able to make an informed decision related to infant feeding options ($p = 0.014$), equipped the health care worker with enough skills to communicate with the mother in such a manner that the decision she made regarding infant feeding options would not be influenced ($p = 0.007$), and expected the health care worker to educate the mother on the decision she had made, namely how to breast-feed or formula-feed ($p = 0.008$).

Table 3.4: Significant differences between socio-demographic variables and the attitude of health care workers towards the PMTCT Programme

Socio-demographic variable	Variable describing attitude of health care workers	p value
Qualification of the health care workers	The PMTCT Programme, in general, with regard to the infant feeding option counselling, is a good programme	p = 0.032
	The 5-day PMTCT course equips the health care worker with enough skills to be able to communicate with the mother in such a manner that the decision the mother makes regarding infant feeding options will not be influenced	p = 0.000
The year in which the health care worker obtained the qualification	The 5-day PMTCT course equips the health care worker with enough skills to be able to communicate with the mother in such a manner that the decision the mother makes regarding infant feeding options will not be influenced	p = 0.003
	The 5-day PMTCT course expects of the health care worker to counsel the mother on the advantages and disadvantages of both breast-feeding and formula-feeding without influencing the decision of the mother in any way	p = 0.005
VCT course	The 5-day PMTCT course enables the health care worker to provide the mother with sufficient information to be able to make an informed decision related to infant feeding options	p = 0.014
	The 5-day PMTCT course equips the health care worker with enough skills to be able to communicate with the mother in such a manner that the decision the mother makes regarding infant feeding options will not be influenced	p = 0.007
	The 5-day PMTCT course expects of the health care worker to educate the mother on the decision that she has made, that is how to breast- or formula-feed	p = 0.008

3.2.1.3. Personal preference of the health care workers towards infant feeding options

Of the 57 health care workers who participated in the study 50 had children. Among these, 30 females had breast-fed, 5 formula-fed and 14 mixed-fed their children. The one male health care worker who had children preferred the mother to breast-feed their children (Figure 3.4).

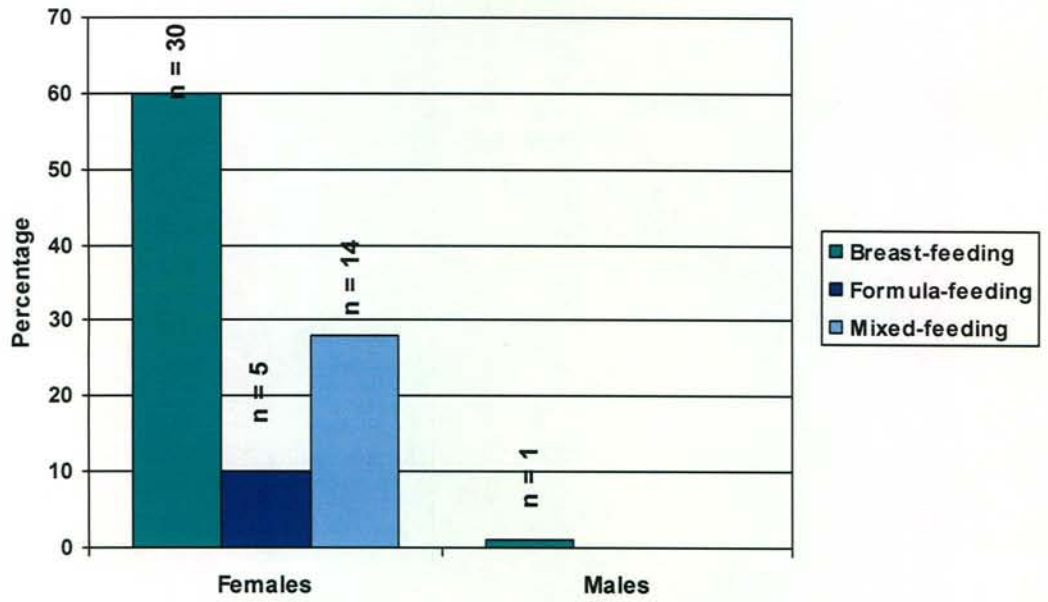


Figure 3.4: Percentage distribution of preference relating to infant feeding options among health care workers who were parents in the sample (n = 50)

Before the health care workers attended the 5-day PMTCT course 22% preferred that HIV-infected mothers should breast-feed their infants, 43% preferred that HIV-infected mothers should formula-feed their infants and 35% preferred the mother to make her own decision. After attending the 5-day PMTCT course 42% of the health care workers preferred that HIV-infected mothers should breast-feed their infants, 21% preferred that HIV-infected mothers should formula-feed their infants and 37% preferred the mother to make her own decision.

The Pearson Chi Square Test revealed significant differences between the year in which the health care workers obtained their qualification and the preference of the health care workers regarding infant feeding options for HIV-infected mothers (Table 3.5). Before attending the 5-day PMTCT course, health care workers who had obtained their qualification between 1990-1994 preferred HIV-infected mothers to breast-feed their infants; those who had obtained their qualification between 1995-1999 preferred HIV-infected mothers to formula-feed their infants and those who obtained their qualification between 2000-2004 preferred the HIV-infected mothers to make their own decision ($p = 0.034$). After attending the 5-day PMTCT course, health care workers who had obtained their qualification between 1995-1999 had a change in opinion regarding infant feeding options for HIV-infected mothers, and the change that occurred most prominently was from formula-feeding (before the 5-day PMTCT course) to breast-feeding (after the 5-day PMTCT course) ($p = 0.009$).

Table 3.5: Significant differences between the year in which the health care workers obtained their qualification and the preference of the health care workers regarding infant feeding options for HIV-infected mothers

Socio-demographic variable	**Variable regarding preference of health care worker**	**p value**
The year in which the health care worker obtained the qualification: *Number of health care workers in each year of qualification:	Preference of health care workers regarding infant feeding options for HIV-infected mothers before attending the 5-day PMTCT course	$p = 0.034$
15 in 200-2004 19 in 1995-1999 9 in 1990-1994 4 in 1985-1989 5 in 1980-1984 1 in 1975-1979 4 in 1970-1974	Type of change in preference of health care workers regarding infant feeding options for HIV-infected mothers which took place after attending the 5-day PMTCT course	$p = 0.009$

* For details see Table 3.1.

Upon asking health care workers whether they were able to stay neutral in a counselling session with a mother despite their preference for breast-feeding or formula-feeding, 37 (65%) indicated that they could, 11 (19%) indicated that they could not and 9 (16%) were not sure.

Of those who indicated that they could not, or were not sure whether they could remain neutral in the counselling session with a mother, 35% (7) indicated that it was still in the mother's best interest to be counselled by them even if it meant that they would influence the mother's decision, 60% (12) indicated that it was not in the mother's best interest and 5% (1) were not sure whether it would be in the mother's best interest (Figure 3.5).

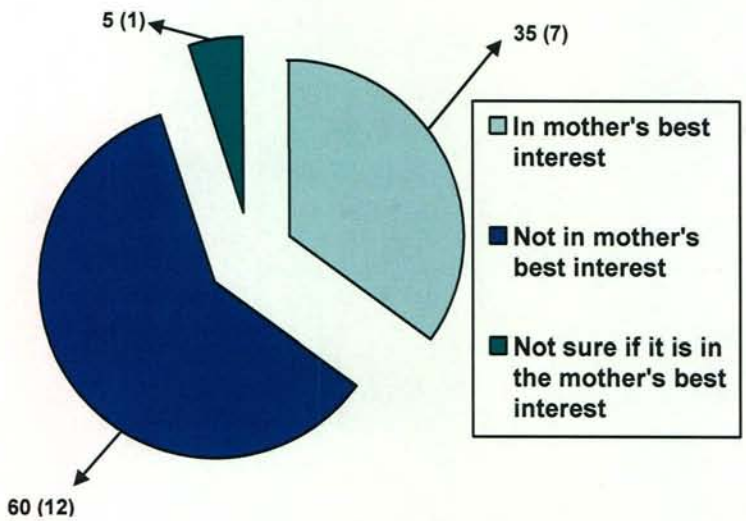


Figure 3.5: Percentage distribution (n) of health care workers who indicated they could not or were not sure they could remain neutral in advising the mother in relation to their bias being in the interest of the mother

The Pearson Chi Square Test revealed significant differences between some of the socio-demographic variables and the ability of the health care workers to stay neutral in a counselling session with a mother despite their personal preference for breast-feeding or formula-feeding and whether it was in the mother's best interest to be counselled by a health care worker who could not stay neutral during the counselling session with the mother (Table 3.6). Health care workers in the age group 24-34 years ($p = 0.045$) and

who had obtained their qualification between 1995-1999 ($p = 0.029$), indicated they were able to stay neutral in a counselling session with a mother despite their personal preference for breast-feeding or formula-feeding. Health care workers who had obtained their qualifications between 1990-1999 ($p = 0.014$) and lay counsellors indicated that it was not in the mother's best interest to be counselled by a health care worker who could not stay neutral during the counselling session with the mother, whereas chief professional nurses indicated that it was in the mother's best interest ($p = 0.003$).

Table 3.6: Significant differences between socio-demographic variables and the possibility of the health care workers to stay neutral in a counselling session with a mother despite their personal preference for breast-feeding or formula-feeding and if they thought it was in the mother's best interest to be counselled by a health care worker who could not stay neutral during the counselling session with the mother

Variable	Socio-demographic variable	p value
The possibility of the health care workers to stay neutral in a counselling session with a mother despite their personal preference for breast-feeding or formula-feeding	*Age group of the health care workers	$p = 0.045$
	*The year in which the health care worker obtained the qualification	$p = 0.029$
The mother's best interest to be counselled by a health care worker who cannot stay neutral during the counselling session with the mother	*Qualification of the health care workers	$p = 0.003$
	*The year in which the health care worker obtained the qualification	$p = 0.014$

* For details please refer to text

Only 1 (2%) of the health care workers did not agree that the mother had a right to make her own informed decision. Upon asking health care workers if they thought that mothers were capable of making such an important decision, 47 (82%) agreed and 10 (18%) disagreed. One of the health care workers who agreed to the statement made a note that some mothers need to be "assisted" with their decision.

Pearson Chi Square Test revealed significant differences between several of the socio-demographic variables and whether or not the health care workers thought a mother had the right to make an informed decision (Table 3.7). Health care workers in the age groups 25-54 years ($p = 0.032$) and those who had obtained their qualifications from 1995-2004 ($p = 0.036$) indicated that mothers had a right to make their own informed decision.

Table 3.7: Significant differences between socio-demographic variables and whether or not the health care workers thought a mother had the right to make an informed decision

Variable	Socio-demographic variable	p value
Mothers have the right to make an informed decision	Age group of the health care workers	$p = 0.032$
	The year in which the health care worker obtained the qualification	$p = 0.036$

3.2.1.4. Resources

Nineteen (33%) of the health care workers in the sample ($n = 57$) agreed that the facility where they were stationed at had enough staff and therefore sufficient time could be spent with a mother to counsel her on infant feeding options, and 38 (67%) disagreed.

The Pearson Chi Square Test revealed significant differences between several socio-demographic variables and whether or not it was felt that enough staff was stationed at facilities to spend sufficient time with a mother during a counselling session (Table 3.8). Health care workers in the age group 45-54 years ($p = 0.023$), chief professional nurses

($p = 0.019$) and those who had completed the VCT course ($p = 0.024$) indicated that not enough staff were stationed at facilities to spend sufficient time with a mother during a counselling session.

The One-Way ANOVA Test revealed significant associations ($p = 0.013$) between the ages of the health care workers who indicated that there was enough staff (mean age = 37 years) at facilities to spend sufficient time with a mother during a counselling session and those who disagreed (mean age = 44 years) (Figure 3. 6). This finding was confirmed with the Kruskal-Wallis Test.

Table 3.8: Significant differences between socio-demographic variables and whether or not enough staff was stationed at facilities to spend sufficient time with a mother during a counselling session

Variable	**Socio-demographic variable**	**p value**
Enough staff is stationed at facilities to spend sufficient time with a mother during a counselling session	Age group of the health care workers	$p = 0.023$
	Qualification of the health care workers	$p = 0.019$
	VCT course	$p = 0.024$

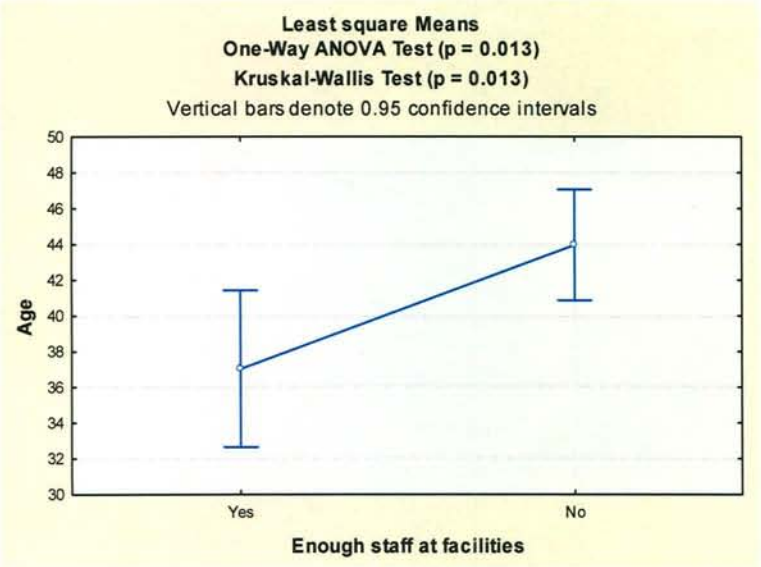


Figure 3.6: Relationship between the age of health care workers and their opinion of having sufficient time to counsel mothers

Thirty (53%) of the health care workers indicated that they used the feeding option cards provided to them in the PMTCT manual when explaining feeding options to the mother, and 27 (47%) indicated not using the feeding option cards. Of those who used the feeding option cards 17 (57%) indicated that these cards were enough to enable them to explain the feeding options to the mother and 13 (43%) indicated that they were insufficient.

The One-Way ANOVA Test revealed significant associations ($p = 0.046$) between the ages of the health care workers who indicated using the feeding option cards (mean age = 39 years) and those who did not (mean age = 44 years) (Figure 3.7).

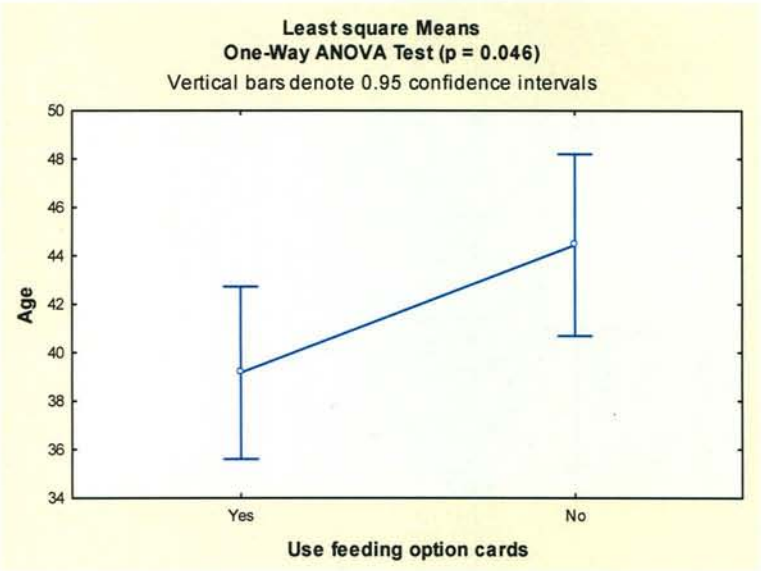


Figure 3.7: Significant associations between the mean age of the health care workers and usage of the feeding option cards during counselling sessions with the mothers

Thirty (53%) of the health care workers agreed that more educational material was not needed to educate mothers on how to breast-feed, as opposed to 27 (47%) who indicated that more educational material was needed to educate mothers on how to breast-feed. Thirteen of the 27 health care workers who indicated that more educational material was needed, used the feeding option cards. Several types of educational material were suggested (Table 3.9).

Table 3.9: Types of educational material suggested by health care workers that were needed to educate mothers on breast-feeding (n = 27)

Type of educational material	n (%)
1. Posters	11 (41)
Topics suggested for posters:	
1.1. positioning	1 (4)
1.2. attachment	1 (4)
1.3. anatomy of the breast	1 (4)
1.4. breast conditions	1 (4)
1.5. different types of breasts and nipples	1 (4)
1.6. benefits of breast-feeding	1 (4)
1.7. information on exclusive breast-feeding	1 (4)
1.8. HIV infection during breast-feeding	1 (4)
1.9. information on PMTCT	1 (4)
2. Video cassettes	5 (19)
3. Equipment to explain how to express breast milk	5 (19)
4. Pamphlets regarding breast-feeding to give to mothers	4 (15)
5. Dolls	3 (11)
6. Feeding cups	2 (7)
7. Flip charts	1 (4)
8. Booklets regarding breast-feeding to give to mothers	1 (4)
9. Models (no specific type suggested)	1 (4)
10. Comfortable chairs	1 (4)

Sixty one percent (35) of the health care workers in the sample indicated that they demonstrated to the mother how to prepare the commercial formula once she had chosen to formula-feed her infant, 14% (8) indicated they did not demonstrate the preparation of the commercial formula and 25% (14) indicated that they only sometimes demonstrated how to prepare the commercial formula (Figure 3.8). Various reasons were given as to

why the health care workers (n = 22) did not demonstrate the preparation of the formula feed to the mother (Figure 3.9).

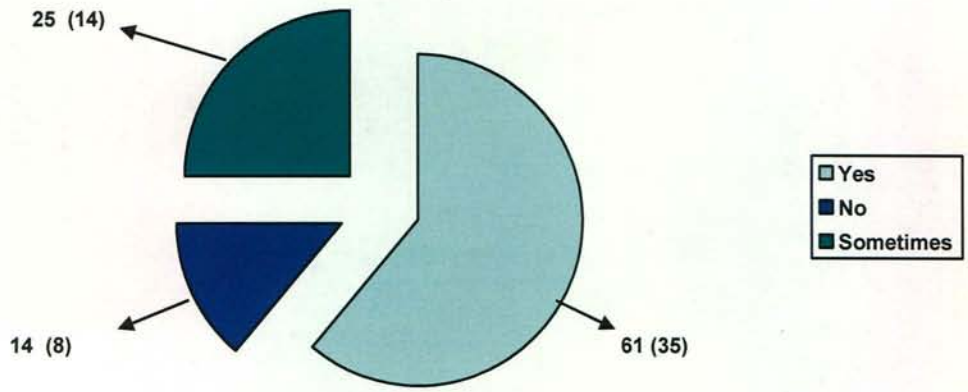


Figure 3.8: Percentage distribution (n) of health care workers demonstrating formula preparation to the mothers who chose to formula-feed

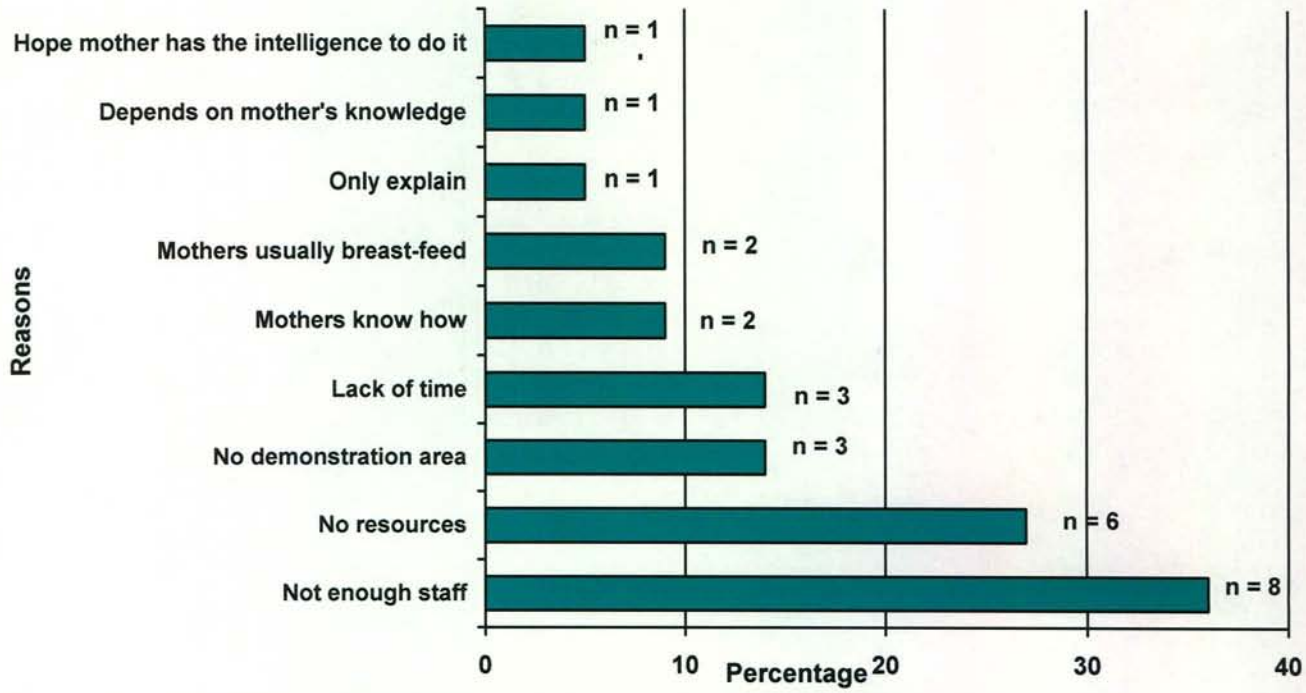


Figure 3.9: Percentage distribution of reasons indicated by health care workers why they did not demonstrate the preparation of commercial formula to mothers who chose to formula-feed (n = 22)

The One-Way ANOVA Test revealed significant associations (p = 0.037) between the age of the health care workers who demonstrated the preparation of the formula feed to the mother [mean age = 40 years] (± 95% CI = 37-43 years), those who did not [mean age = 38 years] (± 95% CI = 32-45 years) and those who only sometimes [mean age = 47 years] (± 95% CI = 42-52 years) demonstrated the preparation of the formula feed to the mother (Figure 3. 10). This finding was confirmed with the Kruskal-Wallis Test.

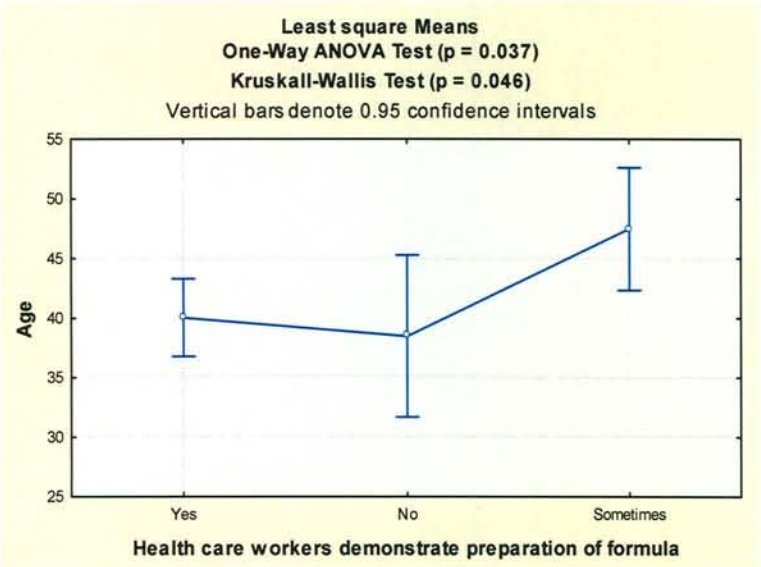


Figure 3.10: Significant associations between the mean age of health care workers and whether or not they demonstrate the preparation of the formula feed to the mother

Thirty five (61%) of the health care workers in the sample gave the mother an opportunity to demonstrate the preparation of the formula, whereas 17 (30%) never gave the mother an opportunity and 5 (9%) only sometimes gave the mother the opportunity to demonstrate the preparation of the formula. Reasons provided by health care workers (n = 22) for not letting the mother demonstrate the preparation of the formula, did not differ significantly from the reasons given why the health care workers did not demonstrate the preparation of the formula themselves in the first place (Figure 3.11). Most health care workers basically had all the equipment needed to demonstrate the

preparation of a formula in their facility. A marked cup, knife and spoon were the most likely equipment not to be available.

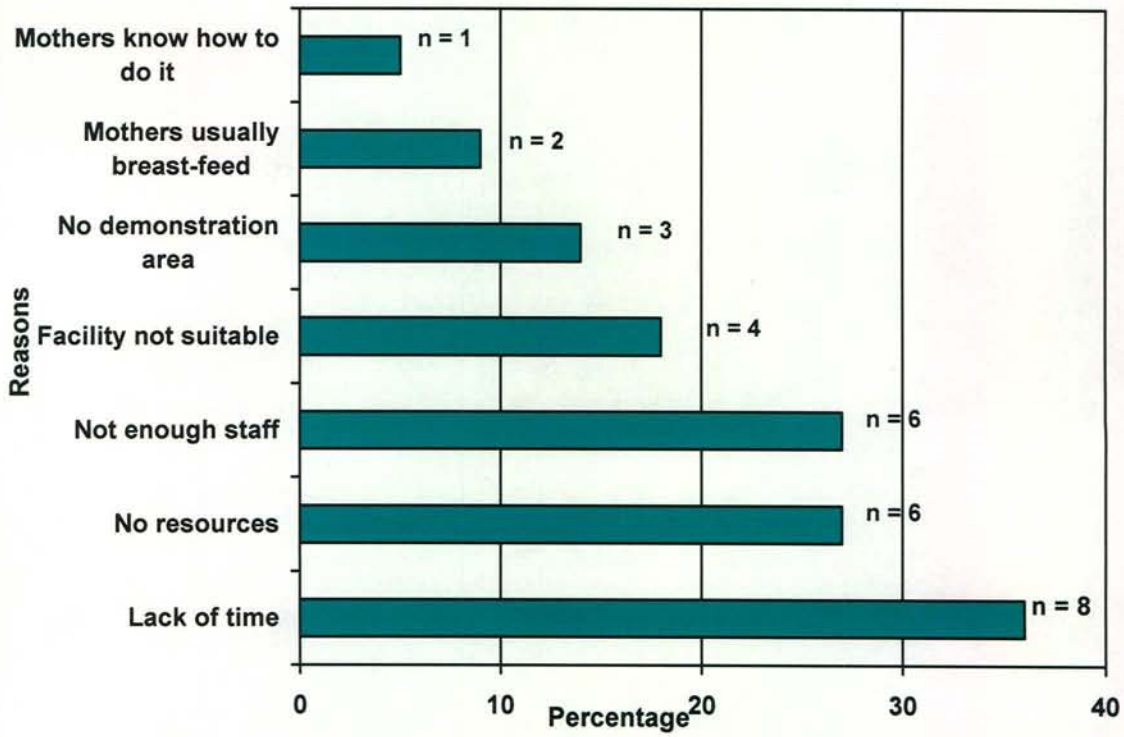


Figure 3.11: Percentage distribution of reasons indicated by health care workers why mothers are not given the opportunity to demonstrate the preparation of the formula feeding during a counselling session (n = 22)

3.2.1.5. Knowledge of the health care workers regarding breast-feeding and formula- feeding

Knowledge of breast-feeding

Upon asking the health care workers in the sample, which factors they regarded as important to point out to an HIV-infected mother who wanted to breast-feed, and the factors which might increase her chances of HIV transmission through breast-feeding, 28 (49%) indicated that all the factors (contained in the questionnaire) were important to point out to the mother, and 13 (23%) indicated that only mixed-feeding was important to point out to the mother. Sixteen (28%) of the health care workers in the sample indicated

that all the other factors (in the questionnaire) were also individually, important to point out (Table 3.10).

Thirty eight (67%) of the health care workers in the sample (n = 57) knew that a mother should start breast-feeding within 30 minutes after birth, 4 (7%) indicated that within one hour after birth was correct and 15 (26%) indicated that it did not matter when the mother started breast-feeding. Forty (70%) of the health care workers in the sample knew that a mother should be encouraged to breast-feed her infant on demand, but the rest of the health care workers indicated other time periods (Table 3.11).

Table 3.10: Knowledge of health care workers regarding factors that can increase the risk of HIV transmission from an HIV-infected mother, who chooses to breast-feed, to her infant (n = 57)

Factors that might possibly increase HIV transmission from an HIV-infected mother to her infant when breast-feeding	**n (%)**
Recent infection with HIV	3 (5)
Infection with an sexually transmitted disease (STD)	0 (0)
Duration of breast-feeding	5 (9)
Mixed-feeding	13 (23)
Breast conditions like cracked nipples or mastitis	5 (9)
Condition of the infant's mouth	3 (5)
All of the above	28 (49)

Table 3.11: Knowledge of health care workers regarding when a mother should start breast-feeding after birth and how frequently a mother should breast-feed her infant (n = 57)

Initiation of breast-feeding	**n (%)**	**Frequency with which a mother should breast-feed her infant**	**n (%)**
Within 30 minutes after birth	38 (67)	3 hourly	7 (12)
Within one hour after birth	4 (7)	When the mother thinks the infant is hungry	3 (5)
It does not matter when the mother starts breast-feeding	15 (26)	On demand	40 (70)
		All of the above	6 (11)
		None of the above	1 (2)

Forty seven (82%) of the health care workers in the sample (n = 57) knew that a mother should be encouraged not to mix-feed, regardless of whether she had chosen breast-feeding or formula-feeding, but 10 (18%) indicated that a mother could mix-feed.

Thirty eight (67%) of the health care workers in the sample (n = 57) knew the correct positioning of an infant to the mother's breast. The other 19 (33%) health care workers indicated incorrect answers (Table 3.12). Thirty seven (65%) of the health care workers in the sample (n = 57) knew the correct latching techniques. Twenty (35%) of the health care workers in the sample indicated incorrect answers (Table 3.13).

Forty seven (82%) of the health care workers in the sample (n = 57) knew that when a mother had mastitis, she should be advised to continue breast-feeding on the uninfected breast and discard all the expressed milk from the infected breast, but 10 (18%) indicated the mother should be advised to stop breast-feeding and start formula-feeding.

Table 3.12: Knowledge of the health care workers in the sample regarding correct positioning of an infant at the breast (n = 57)

Statements contained in the questionnaire	n (%)
With the infant's head and body straight	1 (2)
Facing the mother's breast, with the infant's nose opposite the mother's nipple	7 (12)
With the infant's body close to the mother's body	1 (2)
With the infant's whole body supported, not just the neck and shoulders	8 (14)
All of the above	38 (67)
None of the above	0 (0)
In any way that is comfortable for the mother	2 (3)

Table 3.13: Knowledge of health care workers in the sample regarding correct latching of an infant to the breast (n = 57)

Statement	n (%)
Lower lip curled outward	1 (2)
Infant's chin touching mother's breast	1 (2)
Infant's mouth covering most of the areola, not just the nipple	18 (32)
All of the above	37 (65)
None of the above	0 (0)

The Pearson Chi Square Test revealed significant differences between several socio-demographic variables and the knowledge of the health care workers regarding breast-feeding (Table 3.14). It was mostly chief professional nurses ($p = 0.000$) and health care workers who had obtained their qualification between 2000-2004 ($p = 0.009$), who knew the correct positioning of an infant to the mother's breast. Chief professional nurses knew the correct latching of an infant to a mother's breast ($p = 0.001$) and that a mother should breast-feed on demand ($p = 0.038$). All health care workers from the age group 25-34

years (p = 0.017) and those who had obtained their qualification during 1995-1999 (p = 0.004) knew that a mother must be discouraged from mix-feeding.

Table 3.14: Significant differences between socio-demographic variables and the knowledge of the health care workers regarding breast-feeding

Variable	Socio-demographic variable	p value
Correct positioning	Qualification of the health care workers	p = 0.000
	The year in which the health care worker obtained the qualification	p = 0.009
Correct latching	Qualification of the health care workers	p = 0.001
The frequency with which a mother should breast-feed her infant	Qualification of the health care workers	p = 0.038
Mother advised to mix-feed or not	Age group of the health care workers	p = 0.017
	The year in which the health care worker obtained the qualification	p = 0.004

Knowledge of formula-feeding

Only 21 (37%) of the health care workers in the sample (n = 57) knew that the average amount of commercial formula feed needed for a term infant was 150 ml/kg/day. The rest of the health care workers in the sample indicated incorrect answers (Figure 3.12).

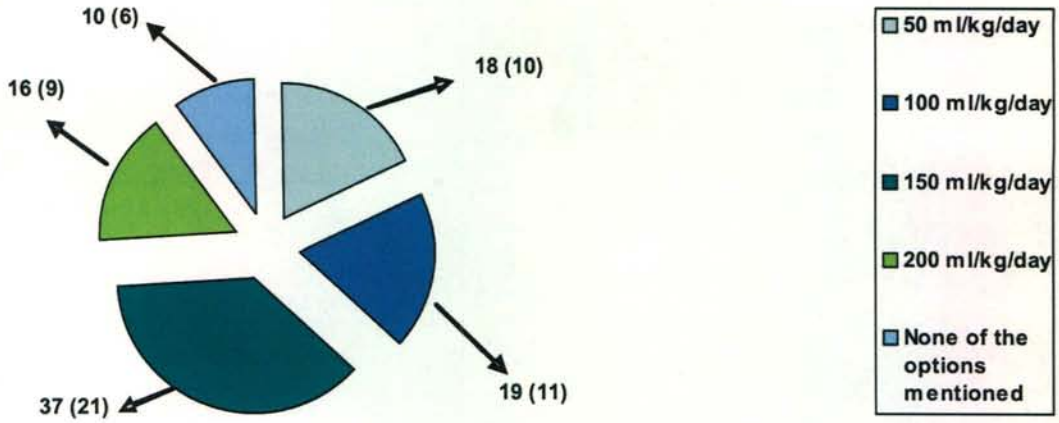


Figure 3.12: Percentage distribution (n) of health care workers knowing the average amount of commercial formula feed needed per day by a term infant (n = 57)

Thirty two (56%) of the health care workers in the sample (n = 57) knew that the amount of commercial formula feed needed per day by a term infant should be divided into 6-8 feeds per day. The rest of the health care workers in the sample indicated incorrect answers (Appendix M: Table 3.3).

The 5-day PMTCT course teaches the health care workers to train a mother how to prepare a commercial infant formula in seven basic steps namely:

1. Get equipment ready
2. Wash hands before preparing feeds
3. Bring water to the boil and cool. Keep covered while it cools
4. Measure levelled scoops of formula powder into the marked cup or glass
5. Add small amount of cooled boiled water and stir. Fill cup with water and stir well
6. Feed the infant using a cup
7. Wash the utensils

Upon asking the health care workers to name the seven steps in preparing a commercial formula in an open-ended question, not one health care worker in the sample (n = 57) was able to name all seven basic steps. Twenty nine (39%) indicated that the equipment had to be ready before starting, 44 (77%) indicated that hands had to be washed before preparing the feed and 57 (100%) indicated the water had to be boiled. Thirty eight (67%) indicated the boiled water had to be cooled down and only 5 (9%) indicated that the water had to be covered while cooling down. Of the 19 (33%) health care workers who did not indicate that the water had to be cooled down, only 10 (47%) indicated that the bottle of milk which was prepared with boiled water had to be placed in a container with cold water and cooled down. Thirty (53%) indicated the scoops of formula had to be level, 52 (91%) indicated the water had to be added to the formula and stirred well and only 16 (28%) indicated that the infant had to be fed with a cup. Five (9%) indicated that the utensils had to be washed after the preparation of the feed (Table 3.15).

Although not part of the seven steps for preparing a commercial formula on which the knowledge of the health care workers was tested, only 9 (16%) of the health care workers indicated that only one feed had to be prepared at a time.

Table 3.15: Knowledge of the health care workers regarding the preparation of a commercial formula feed (n = 57)

Step	n (%)
Get equipment ready	22 (39)
Wash hands before preparing feeds	44 (77)
Bring water to the boil and cool	57 (100)
Cool boiled water	38 (67)
Keep water covered while it cools	5 (9)
Measure levelled scoops of formula powder into the marked cup or glass	30 (53)
Add small amount of cooled boiled water and stir. Fill cup with water and stir well	52 (91)
Feed the infant using a cup	16 (28)
Wash the utensils	5 (9)

3.2.2. Mothers

3.2.2.1. Socio-demographic profile of the mothers

According to the research protocol about 40 mothers were expected to participate in the study, but due to the time lapse between the compilation of the protocol and the start of the research project more mothers had been placed on the PMTCT Programme and therefore a total of 65 mothers participated in the study. Only 55 of the mothers were included in this sample, 4 of the mothers having been excluded because their youngest child was older than 4 months, 1 participant was male and had to be excluded and 5 questionnaires had been misplaced by a field worker. The investigator visited the specific PMTCT site, namely Embhuleni Hopsital (the same site which had misplaced the questionnaires for the health care workers) to trace the missing questionnaires or to find the mothers whose questionnaires had been misplaced in order for them to complete the questionnaires a second time. The investigator did not succeed in finding the missing questionnaires and the PMTCT site manager could not succeed in tracing the mothers who had completed the questionnaires. The 55 mothers' data used in the study represented all seven municipal areas (Appendix M: Figure 3.3). Although all 7 municipal areas were represented in the study, 9 of the 23 PMTCT sites were not represented in the study for various reasons for example no mothers attended the clinic during the month of data collection, some questionnaires were misplaced, some mothers refused consent and one mother's child was older than four months (Appendix M: Table 3.5). The PMTCT site where mothers had refused consent could not give any clarification as to why consent had been refused.

The youngest mother who participated in the study was 21 years old and the oldest was 47 years. The mean age of the mothers in the sample was 28 years (SD = 7.57). The percentages in the different age groups of infants of the mothers in the sample are illustrated in Figure 3.13.

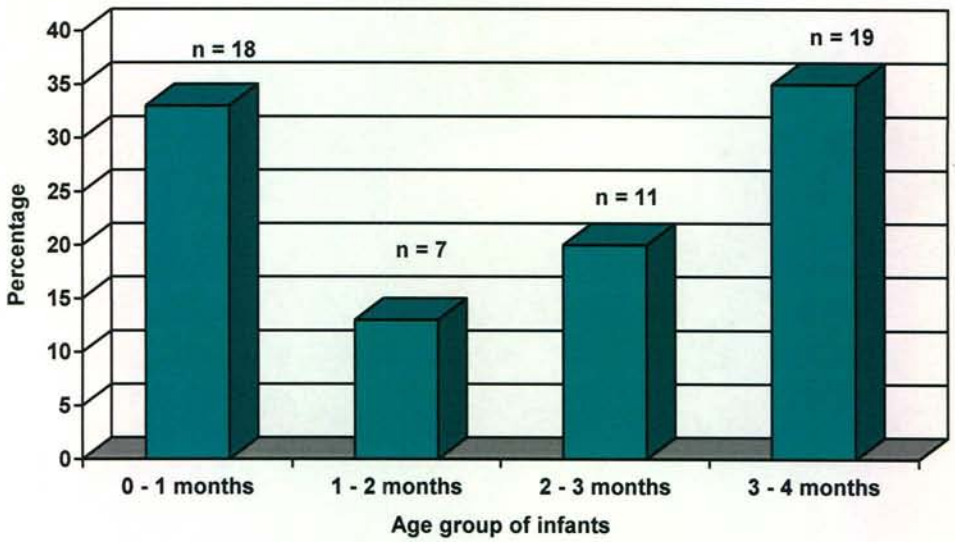


Figure 3.13: Percentage distribution of infants represented by the mothers in the sample by age group (n = 55)

3.2.2.2. General information

Although all socio-demographic variables were tested against all other variables in the study, only significant associations or differences are reported in the thesis.

Eighteen percent (10) of the mothers in the sample (n = 55) chose breast-feeding as their feeding option, 62% (34) chose formula-feeding as their option and 20% (11) chose mixed-feeding (Figure 3.14).

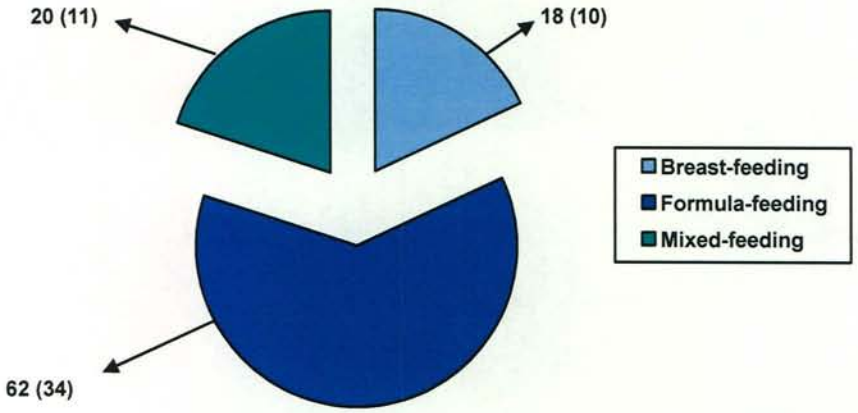


Figure 3.14: Percentage distribution (n) of feeding options among mothers in the sample (n = 55)

Seven (13%) of the mothers in the sample (n = 55) indicated that they had been influenced or pressurised by a family member to practise a different infant feeding option from the one they had chosen, whereas the other 48 (87%) indicated not being influenced by a family member.

Forty seven percent of the mothers in the sample (n = 55) indicated that if they were to formula-feed their infants, the community would suspect that they were HIV-infected and 53% indicated that the community would not suspect them to be HIV-infected. Seventy one percent of the mothers in the sample (n = 55) indicated that breast-feeding was the feeding option better accepted in their community and 29% indicated that formula-feeding was more acceptable.

Upon asking mothers whether they were ever in a situation at home where they breast-fed their infants in front of their family and formula-fed when they are alone, only 4% (n = 55) indicated that they did. The rest of the mothers in the sample either breast-fed, or formula-fed their infants in their home situation (Figure 3.15).

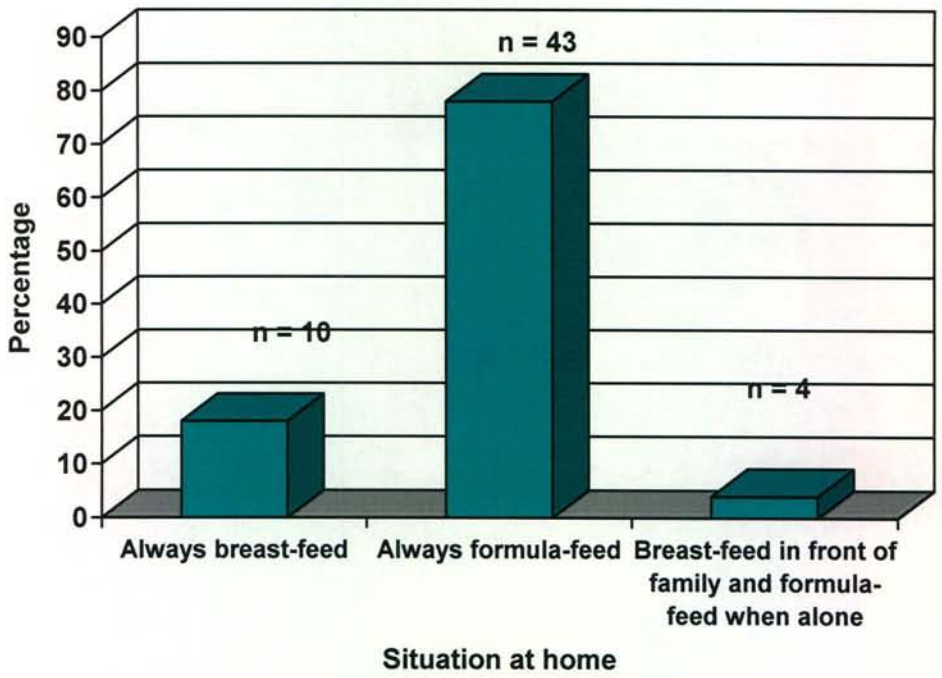


Figure 3.15: Percentage distribution of mothers in the different situations at home regarding infant feeding options

Seventy six percent of the mothers in the sample (n = 55) indicated that in the counselling session with the health care worker regarding infant feeding options, the health care worker explained all the advantages and disadvantages of both breast-feeding and formula-feeding and left the decision to them. Eight percent indicated that the health care worker told them that it was better to breast-feed their infants and 16% indicated the health care worker told them that it was better to formula-feed their infants (Table 3.16).

The One-Way ANOVA Test revealed significant associations (p = 0.007) between the average age of the mothers who indicated that the health care worker left the decision to them (mean age = 27.8 years), those mothers who indicated that the health care worker implied breast-feeding was better (mean age = 39.7 years) and those mothers who indicated that the health care worker implied formula-feeding was better (mean age = 26.6 years) (Figure 3.16).

Table 3.16: Mothers' indication of what happened during the infant feeding counselling session with the health care workers (n = 55)

Statement	n (%)
Health care worker explained advantages and disadvantages of both breast-feeding and formula-feeding and left the decision to the mother	42 (76)
Health care worker indicated that it was better to breast-feed	4 (8)
Health care worker indicated that it was better to formula-feed	9 (16)

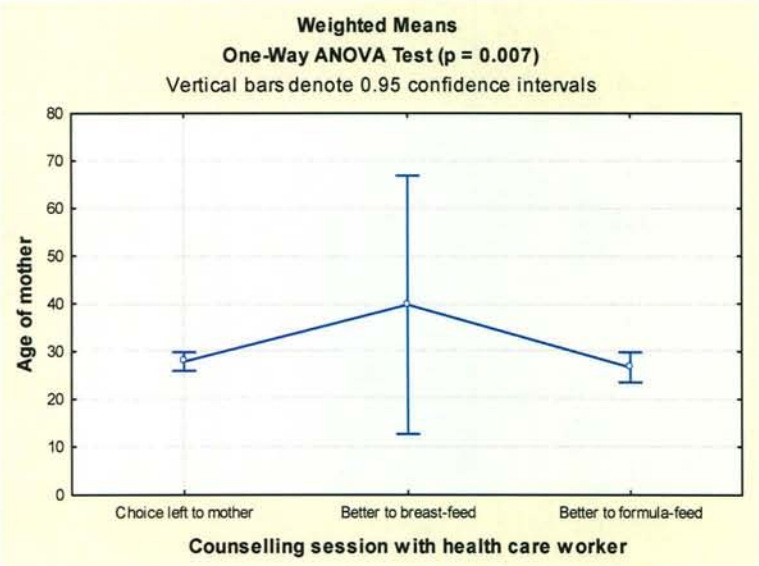


Figure 3.16: Significant associations between the ages of the mothers and the mother's infant feeding counselling session with the health care worker (p = 0.007)

Sixteen percent of the mothers in the sample (n = 55) indicated that they chose the feeding option the health care worker told them was the better option to practise, 4% had decided before the counselling session what feeding option they were going to practise based on what their family wanted them to do and 80% indicated that they listened carefully to what the health care worker told them and then decided on a feeding option based on the information provided to them.

3.2.2.3. Mothers who breast-feed

The questionnaire was structured to include questions of a general nature regarding infant feeding options (of which the results were reported in section 3.2.2.2.), as well as questions specifically regarding breast-feeding aimed at mothers who breast-fed their infants, and questions specifically regarding formula-feeding aimed at mothers who formula-fed their infants. Mothers were asked to complete questions on breast-feeding only if that was the only feeding option that they were practising, to complete questions on formula-feeding only if that was the only feeding option that they were practising, or to complete both the questions on breast-feeding and formula-feeding if they were both breast-feeding and formula-feeding their infants.

The results regarding breast-feeding which are presented in this section include data from the mothers who exclusively breast-fed (n = 10) and those who both breast-fed and formula-fed (n = 11) their infants. The combined sample size for this section was 21.

Fifty two percent (11) of mothers (n = 21) started breast-feeding within half an hour after birth, 43% (9) started within hours after birth and 5% (1) started within days after birth (Figure 3.17).

Eighty one percent of mothers indicated that a health care worker had helped them position and attach their infants once they had to start breast-feeding and only 19% indicated they had not received any help. Of the 21 mothers who breast-fed their infants exclusively or together with formula-feeding, thirteen experienced problems with breast-feeding. All 13 mothers (100%) experienced problems with mastitis or sore nipples. Eight (62%) experienced problems with not having enough breast milk and 7 (54%) experienced problems with infants who refused the breast.

The Pearson Chi Square Test revealed significant differences between the age of the infants and breast-feeding difficulties experienced by the mothers (Table 3.17). Mothers of infants in the age group 3-4 months mostly experienced problems with not having

enough milk, followed by mothers with infants in the age group 1-2 months and then by mothers with infants in the age group 0-1 months (p = 0.019). Furthermore, mothers of infants in the age group 3-4 months mostly experienced problems with infants refusing the breast, followed by mothers with infants in the age group 1-2 months and then mothers with infants in the age group 2-3 months (p = 0.045).

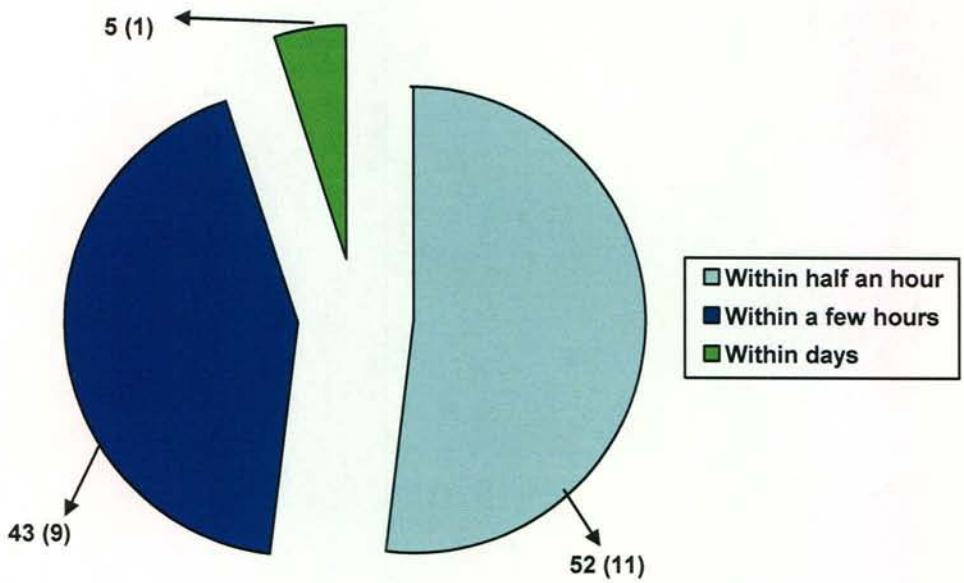


Figure 3.17: Percentage distribution (n) of mothers starting breast-feeding within a specific time span after birth (n = 21)

Table 3.17: Significant differences between the age group of the infants and breast-feeding difficulties experienced by the mothers

Socio-demographic variable	Variable describing breast-feeding difficulty	p value
Age group of infants	Not enough milk	p = 0.019
	Infant refuses the breast	p = 0.045

Of the 13 mothers who experienced problems with breast-feeding, 5 stopped breast-feeding because of these problems, whereas 8 did not stop breast-feeding regardless of the problems they experienced. Three of the five mothers who stopped breast-feeding because of the problems they experienced did not go to the clinic for advice and the 2 that did go to the clinic for advice were told that they should stop breast-feeding and rather start formula-feeding (both experienced problems with mastitis and not enough milk). Of the 8 mothers that did not stop breast-feeding regardless of the problems they experienced, 4 did not go to the clinic for advice and the other 4 were advised at the clinic to express their milk (those who had mastitis); one was advised to follow a healthy diet, not feed on the breast which was painful, cover the painful breast with a warm cloth and smear milk from the breast on the sore breast.

The Pearson Chi Square Test revealed significant differences between the age group of the infant and whether or not the mother stopped breast-feeding because of breast-feeding difficulties. Mothers with infants in the age group 3-4 months mostly stopped breast-feeding because of the breast-feeding problems they experienced, followed by mothers with infants in the age group 1-2 months ($p = 0.017$). (The age groups of the infants indicated are the ages of the infants at the time of study contact and not necessasarily the specific age of the infant when the mother stopped breast-feeding because of breast-feeding problems).

The One-Way ANOVA Test revealed significant associations ($p = 0.002$) between the ages of the mothers in relation to those mothers (mean age = 34.2 years) who stopped breast-feeding because of breast-feeding difficulties and those mothers (mean age = 25.3 years) who did not (Figure 3.18).

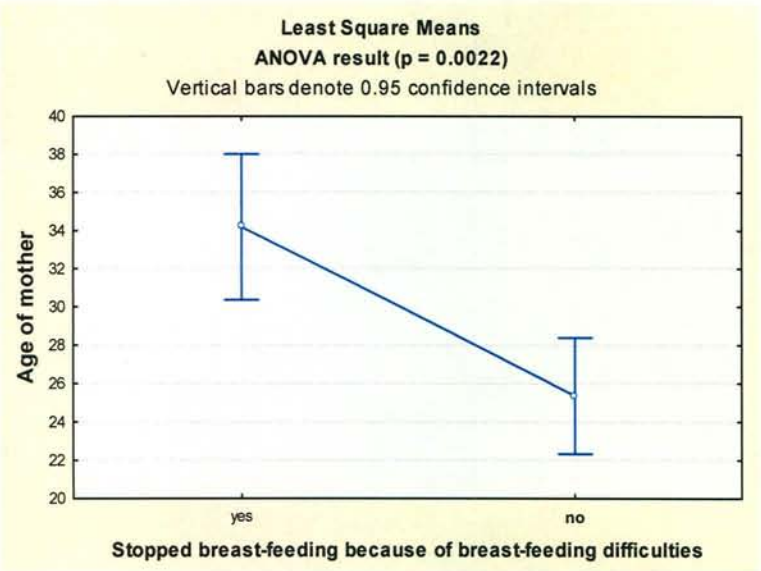


Figure 3.18: Significant associations between the mean age of mothers who stopped breast-feeding because of breast-feeding difficulties and those who did not

3.2.2.4. Mothers who formula-feed

The results regarding formula-feeding which are presented in this section include data from the mothers who exclusively formula-fed (n = 34) and those who both breast-fed and formula-fed (n = 11) their infants. The sample size for this section was thus 45.

Sixty two percent of the mothers who formula-fed their infants indicated that a health care worker told them the amount of formula-feeding the infant should be given per day, and 38% indicated that no health care worker told them what amount of formula-feeding would be needed. The mothers who replied that a health care worker had indicated how much formula their infants would need per day, were also asked to reply on the volume of the formula feed given. For this question only 5 answers made any sense, for example "I give 25ml of milk at a feeding time", whereas nonsensical answers were provided by the other mothers. (In the pilot study this question was clearly understood by both mothers who completed the questionnaires in Zulu and English). As most of the mothers were from very remote rural areas and most of them did not want to give (or did not

have) contact numbers, the investigator could not reach the mothers to clarify the answers to the question. Eight of the mothers who answered "yes" to the question did not answer the question regarding the volume of the formula feed the health care worker told them to feed their infants per day and the investigator was also not successful in contacting these mothers.

Eighty two percent of mothers who formula fed (n = 45) their infants indicated that a health care worker had explained to them how to prepare a formula feed and 18% had not received any explanation. Seventy three percent reported that a health care worker had demonstrated the preparation of the formula to them, and 27% reported that no demonstration had been given by a health care worker. Furthermore, 67% of the mothers reported that they had been given an opportunity to prepare the formula themselves and 33% had never been given the opportunity.

The Pearson Chi Square Test revealed significant differences between the age group of the infant and whether or not the health care worker had explained the preparation of the formula to the mother. Health care workers mostly had not explained the preparation of the formula feed to mothers with infants in the age group 0-1 and 1-2 months, followed by mothers with infants in the age groups 2-3 and 3-4 months ($p = 0.038$).

The One-Way ANOVA Test revealed significant associations ($p = 0.015$) between the age of the mothers (mean age = 31.2 years) who were given the opportunity by the health care workers to demonstrate the preparation of the formula feed, and those mothers (mean age = 25 years) who were not given the opportunity (Figure 3.19).

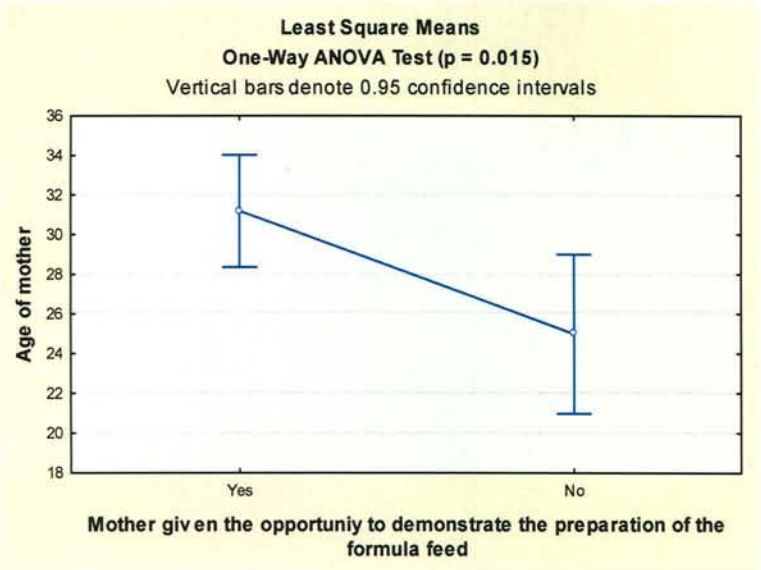


Figure 3.19: Relationship between maternal age and the health care workers giving an opportunity to demonstrate the preparation of the formula feed

Upon asking the mothers (n = 45) to explain exactly how they prepared the formula feed at home, one did not answer the question and could not be reached because the mother had no contact telephone number. Eleven percent indicated the equipment had to be ready before starting, 48% indicated hands had to be washed before preparing the feed and 86% indicated that the water had to be boiled. Fifty seven percent indicated that the boiled water had to be cooled down and 0% indicated that the water had to be covered while cooling down (of the 43% who did not indicate that the water had to be cooled down, 16% indicated that the bottle of milk that was prepared with boiled water had to be placed in a container with cold water and cooled down). Thirty two percent indicated that the scoops of formula had to be level, 82% indicated that the water had to be added to the formula and stirred well and only 5% indicated that the infant had to be fed with a cup. Not one of the mothers (0%) indicated that the utensils had to be washed after the preparation of the feed (Table 3.18).

None of the mothers mentioned that they only prepared one feed at a time. Some of the mothers mentioned the amount of scoops and the amount of water that they used during

the preparation of the feed. Five mothers from one clinic prepared the formula at half strength.

The Pearson Chi Square Test revealed significant associations between the age groups of the infants and certain variables regarding the preparation of the formula feed (Table 3.19): It was mostly mothers with infants in the age group 0-1 months who did not indicate that they washed their hands before preparing the formula feed, followed by mothers with infants in the age group 2-3 months, 3-4 months and 1-2 months ($p = 0.04$). Furthermore, mothers with infants mostly in the age group 0-1 months did not indicate using levelled scoops of formula powder, followed by mothers with infants in the age group 2-3 months, 3-4 months and 1-2 months ($p = 0.004$).

Table 3.18: Preparation of a commercial formula feed by mothers (n = 44)

Steps in preparing a formula feed	**n (%)**
Get equipment ready	5 (11)
Wash hands before preparing feeds	21 (48)
Bring water to the boil	38 (86)
Cool boiled water	25 (57)
Keep water covered while it cools	0 (0)
Measure levelled scoops of formula powder into the marked cup or glass	14 (32)
Add small amount of cooled boiled water and stir. Fill cup with water and stir well	36 (82)
Feed the infant using a cup	2 (5)
Wash the utensils	0 (0)

Table 3.19: Significant differences between the age groups of the infants and certain variables regarding the preparation of the formula feed

Socio-demographic variable	Variable describing the preparation of the formula feed	p value
Age group of the infants	Wash hands before preparing the formula feed	p = 0.04
	Measure levelled scoops of formula powder into the marked cup or glass	p = 0.004

All of the mothers (n = 45) reported that they always had clean water (running water from a tap) to prepare the formula feed, but only 39 (87%) reported that they always had some form of fuel available for the preparation of the feed. Forty (89%) of the mothers (n = 45) reported that they prepared each feed for their infants separately and 5 (11%) reported that they prepared all feeds for the day at one time.

Forty nine percent of the mothers reported storing the prepared feed in the fridge and 51% reported storing the prepared feed on the table.

The One-Way ANOVA Test revealed significant associations (p = 0.014) between the age of the mothers who stored the prepared feed in the fridge (mean age = 32 years) and those who stored the prepared feed on the table (mean age = 26 years) (Figure 3.20).This finding was confirmed with a Mann-Whitney U Test.

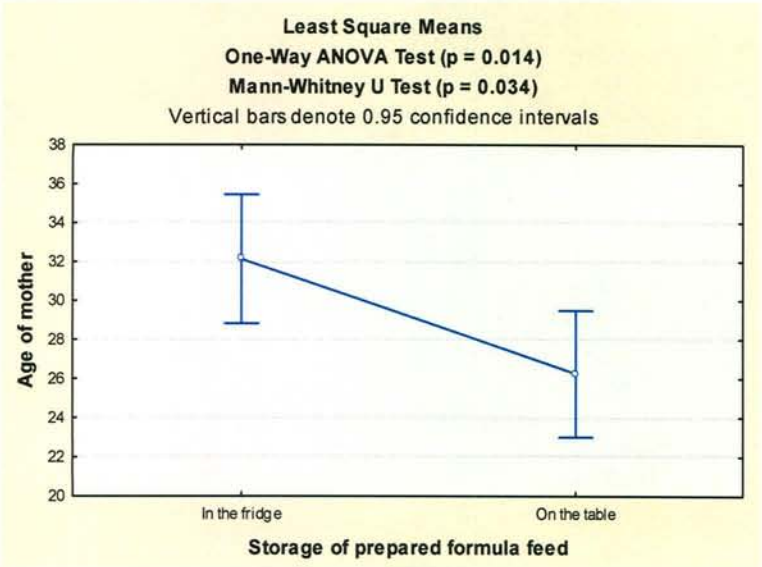


Figure 3.20: Significant associations between the mean age of mothers and where they stored the prepared feed

Forty five percent of the mothers (n = 45) reported that they used the prepared feed within 30 minutes from preparation, 33% used the prepared feed within 30 minutes to one hour from preparation, 11% used the prepared feed one to two hours after preparation and another 11% used the prepared feed more than two hours after preparation.

The Pearson Chi Square Test also revealed significant differences (p = 0.013) between the age group of the infants and the time span in which the mothers used the prepared formula feed. Mothers with infants in the age group 0-1 and 2-3 months mostly used the prepared feed within 0-30 minutes after preparation, mothers with infants in the age group 1-2 months mostly used the prepared feed more than two hours after preparation and mothers with infants in the age group 3-4 months mostly used the prepared feed within 30 minutes to one hour after preparation.

Twenty four percent of the mothers (n = 45) indicated that the reason they chose to formula-feed instead of breast-feed their infants, was because the PMTCT Programme

supplied free formula for the first six months of the infant's life, and 76% replied that that was not their reason for choosing formula-feeding.

Sixty nine percent of the mothers (n = 45) reported that they always had formula available and 31% reported that there were times when no formula was available.

The Pearson Chi Square Test also revealed significant differences (p = 0.044) between the age groups of the infants and whether or not the mothers had a continuous supply of formula available. Mothers with infants in the age group 3-4 months mostly did not have a continuous supply of formula available, followed by mothers with infants in the age group 0-1 and 2-3 months.

The mothers (n = 14) who reported that they did not always have a supply of formula available were asked to describe what they fed their infants when there was no formula. Some mothers indicated that they bought formula when the free supply from the clinic ran out (although it is expensive) and other mothers indicated that they gave their infants cow's milk, tea and sifted, cooked soft porridge.

3.2.3. Significant differences between the replies given by the health care workers and mothers to the same questions in the questionnaire

Statistical tests (Pearson Chi Square Test) were done between the replies given by the health care workers and mothers to the same questions in the questionnaire.

Overall, it would appear that fewer mothers concurred with the replies given by health care workers to the same question in the questionnaire in relation to how soon after birth breast feeding should be initiated, and to the mothers' training received in the correct preparation of formula feeds (Appendix M: Figures 3. 15 – 3.16 and Table 3.6).

3.2.4. Significant differences between non-professional and professional health care workers in terms of performance and knowledge

Statistical tests (Pearson Chi Square Test) were done between the non-professional and professional health care workers in terms of performance and knowledge.

Significant differences were found between the amount of mothers counselled per week by non-professional health care workers in comparison to professional health care workers. Significant differences were found between the non-professional and professional health care workers and their knowledge regarding when a mother should start breast-feeding after birth, their knowledge regarding what advice a mother with mastitis should be given and their knowledge regarding the amount of formula feedings needed per day by a term infant (Appendix M: Tables 3.7 – 3.8).

CHAPTER 4

DISCUSSION

4.1. THE SAMPLE

The population in the Gert Sibande District is predominantly Black African, primarily with a secondary level of education, an unemployment rate of 43% and mostly a monthly income of between R401-R800. Only 13% of the population have electricity, 5% have a source of water within the dwelling and 8% inside the house yard; three percent of the population depends on a community stand for water and another 3% on a community stand within 200m[53].

4.2. HEALTH CARE WORKERS

The findings of the present study indicates that, although health care workers' attitude towards the PMTCT Programme was positive, difficulties were experienced with the practicality/achievability of the goals of the PMTCT Programme, because of reasons such as inadequate resources and rotation of staff to different departments. The most prominent change in preference for infant feeding options that occurred after attending the 5-day PMTCT course was from formula-feeding to breast-feeding. Differences in opinion of health care workers whether it is possible to stay neutral during a counselling session and whether it was still in the mother's best interest to be counselled by health care workers unable to stay neautreal, raised the question whether mothers actually does have a free choice based on an informed decision. The lack of resources led to inadequate service delivery. The training that the health care workers received was appropriate, but not complete. Basic knowledge regarding breast-feeding was mostly inadequate, as well as knowledge regarding formula-feeding.

The health care workers who participated in the study were generally Zulu-speaking women with a nursing background, who completed the 5-day PMTCT course but not necessarily the 18-hour lactation management course nor the VCT course.

The success of PMTCT depends on PMTCT counsellors giving correct information and instilling positive attitudes towards HIV testing and interventions[54]. The fact that the PMTCT counsellors who had neither completed the 18-hour lactation management course nor the VCT course were responsible for counselling HIV-infected mothers regarding infant feeding options is alarming. The VCT course empowers the health care workers with skills and an understanding of how to communicate and empathise with potential HIV clients in order to instill positive attitudes towards HIV testing. The 18-hour lactation management course is imperative to gain basic knowledge and understanding of breast-feeding and one can ask: How is it possible for anyone to counsel someone regarding breast-feeding in an HIV context, when they don't have the basic knowledge required? A study done at three other PMTCT sites in South Africa documented that that the poor quality of counselling in the PMTCT Programme reduced the effectiveness of the programme[55], and that the successful implementation of the PMTCT Programme requires training and retraining of health care workers on current and emerging issues of PMTCT[56]. For example: The knowledge gained by the health care workers who attended the 5-day PMTCT course in 2001 and even 2002 might not be accurate and up to date.

One would have expected that the more qualified health care workers, in this case the senior and chief professional nurses, would have been the ones that did most of the counselling, but in this study lay counsellors counselled more women per week than senior professional nurses and more or less the same number of women per week as chief professional nurses, which is alarming because professional health care workers can be assumed to have significantly better knowledge regarding certain aspects of infant feeding options than non-professional health care workers. On the other hand it should be taken into account that counsellors with higher qualifications also have more duties and responsibilities, leaving less time for the PMTCT Programme.

Health care workers are the key to making PMTCT services work. The introduction of PMTCT into the antenatal care and maternal/child health setting means that health care workers are expected to greatly expand their responsibilities and tasks. This has rarely

been accompanied by financial or other types of compensation, or the appointment of more staff to share the workload[57].

The attitude of the health care workers in the sample towards the PMTCT Programme were positive and the qualifications, as well as the completion of the VCT course appeared to positively influence the attitude of health care workers towards the PMTCT Programme. Lay counsellors and chief professional nurses considered the PMTCT Programme to be a beneficial programme and stated that they had gained enough skills during the training to be able to communicate with mothers in such a manner that they would not influence the mothers in their decision regarding infant feeding options. These findings correspond with findings in another study done in the Western Cape in South Africa, where the majority of the health care workers reported to be confident and capable of providing mothers with accurate information regarding HIV and infant feeding[58]. However, it remains questionable whether the mere completion of the PMTCT course empower health care workers for the huge challenges involved in counselling mothers on infant feeding options, since the latter is influenced by so many other factors. For instance, a few health care workers (14%) from Albert Luthuli, Seme, the Highveld East and Msukaligwa (Appendix M) felt that what the PMTCT Programme expected of them was not practical/achievable, probably reflecting on their work environment, and the main reasons given were mostly lack of resources (staff, space, time and equipment), rotation of PMTCT staff to different departments and PMTCT counsellors not being allocated for counselling only. In this regard, it was the older health care workers (mean age of 44 years and age group 45-54 years), chief professional nurses and those who had completed the VCT course who indicated that not enough staff was stationed at facilities to spend sufficient time with a mother during a counselling session. In the absence of quality assurance data in this regard, possible reasons for this finding could be that the older, more qualified professionals had a wider spectrum of responsibilities other than the PMTCT Programme, and therefore felt overburdened with the PMTCT Programme. This interpretation is in line with previously reported findings of another study which documented that when health care workers had to do counselling in addition to their nursing duties the workload was overwhelming[59].

The perceptions of the counsellor in giving advice on infant feeding methods are important[60]. Breast-feeding was found to be the feeding option practised by most of the health care workers in the sample who had children of their own. Before attending the 5-day PMTCT course, those health care workers who had obtained their qualification between 1990-1994 preferred HIV-infected mothers to breast-feed their infants, between 1995-1999 preferred HIV-infected mothers to formula-feed their infants and between 2000-2004 preferred the HIV-infected mothers to make their own decision. This finding may not be surprising since it is most likely that breast-feeding was the predominant feeding option practiced during 1990-1994, formula-feeding during 1995-1999, and more freedom was available from 2000 onward with the implementation of PMTCT. This could be an indication that undergraduate training since 2000 has had a positive impact on health care workers regarding infant feeding options. This would appear to be also supported by the significant shift from formula-feeding to breast-feeding in health care workers who had obtained their qualifications between 1995-1999, after attending the 5-day PMTCT course. In a study evaluating the PMTCT and Infant Feeding Training in seven provinces of South Africa most of the health care workers (62%) disagreed or strongly disagreed that all HIV-infected mothers should formula-feed their infants before they attended the training, a percentage that increased to 82% after their PMTCT training[61]. One can therefore conclude that the 5-day PMTCT course may be biased towards breast-feeding, since after the 5-day PMTCT course most health care workers appear to prefer HIV-infected mothers to breast-feed instead of being neutral about the issue, even though it is stated very clearly during the course that no preference should be implied either to breast-feeding or formula-feeding, a choice that should remain the mother's decision.

In the present study, almost two thirds of the health care workers indicated that they felt they were able to remain neutral in a counselling session with a mother despite a personal preference for either breast-feeding or formula-feeding. This was significantly the case in the younger health care workers (24-34 years) and those who had obtained their qualifications between 1995-1999. It may therefore be that, although younger health care workers feel that they could remain neutral in a counselling session with a mother, they

are inexperienced and do not realise that it could be very difficult to achieve that aim if one has a perceived or unperceived/subconscious preference.

In the present study, there were significant differences of opinion on whether it was in the mother's best interest to be counselled by a health care worker who could not remain neutral during the counselling session with the mother. Those health care workers who obtained their qualifications between 1990-1999 and lay counsellors mostly indicated that neutrality was not in the mother's best interest, whereas chief professional nurses mostly indicated that it was. It is possible that better educated professionals could feel that, although the feeding option is the mother's decision, mothers may not fully understand all the issues involved in choosing a specific feeding option, and it might actually be beneficial if the mothers were influenced by the preference of the health care worker. The prevailing difference in opinions documented in this study does raise the question of whether or not the mother actually does have a free choice based on an informed decision regarding infant feeding options. Additionally, health care workers aged 25-54 years and those more recently qualified (1995-2004) mostly indicated that mothers had a right to make their own informed decision and 82% felt that the mother was capable of making such an important decision. Irrespective and although the views of the health care workers may differ from those of the mothers counselled by them and may be influenced by their own social and professional backgrounds, the health care worker is the crucial link between policy and practice[60].

The need for additional educational material identified by just under half of the health care workers in the present study should be addressed. This will not only help health care workers to explain issues of breast-feeding better but will also help them to do demonstrations, and help mothers by enabling them to make visual associations with what is explained to them. The majority of these health care workers indicated posters, with various topics regarding PMTCT and infant feeding options, was needed. Nevertheless, it is important to ensure that provision of any such additional posters do not replace interactive participatory counselling, but should only serve as a means for the health care workers to improve the counselling session with the mother.

It is also of concern that a significant percentage of health care workers did not demonstrate the preparation method of the formula feed to the mother and did not provide the opportunity to the mother to demonstrate back the safe preparation of formula feeds. The identified reasons for this inadequate practice, such as insufficient staff, lack of resources, no demonstration area and lack of time can all be addressed by employing enough staff at facilities in order for PMTCT counsellors to concentrate mainly on PMTCT duties, and by providing the proper resources. Other assumptions made by the health care workers, such as "the mother knows how to do it", "depends on the mother's knowledge" and "hope the mother has the intelligence to do it" could be addressed by choosing health care workers with a specific interest in the field to become PMTCT counsellors and those who will realise how important it is to demonstrate the preparation method of formula feeds to the mothers. This is particularly important in view of the data from the WHO which suggest that infants who are not breast-fed and receive formula milk have a 6-fold increased risk of dying in the first 2 months of life, a 4-fold increased risk between 2-3 months and a 2,5-fold increased risk between 4-5 months[1]. Therefore simply to assume that a mother knows how to prepare a formula feed is clearly alarming. It is also important to note that a study in a rural district in Kwa-Zulu Natal, South Africa, found that for safe formula-feeding to be feasible, the method the mothers use for the preparation of the formula feed should adhere to all UNAIDS guidelines, and that just implementing one or two of the several guidelines correctly does not make it feasible[36]. In this regard, the present study has documented that not one mother or health care worker knew all the guidelines for preparing a formula feed. Indeed even the level of education of the mother cannot be considered as a reason to assume that a mother will know how to prepare formula feeds safely[37]. In a study, which was conducted at a PMTCT site in Durban, women who had 12 or more years of education (considered a high level of education in an African setting) and had followed recommended methods of preparation and cleaning still ended up with contaminated milk[37]. Thus although mothers seem to understand and follow instructions on cleanliness and hygiene, sufficient and correct advice as well as education of mothers by the health care workers remain essential[37]. Since most of the health care workers reported to basically have all the equipment needed to demonstrate the safe preparation of the formula, it seems unfair to a

mother who chooses formula-feeding as the option of her choice not to be adequately educated on the issue.

Apart from one study in Abidjan, Côte d'Ivoire[62], most other studies[54,63] found that the knowledge of health care workers on infant feeding practices is inadequate. The present study also found a lack of knowledge on some key issues such as the increased risk of HIV transmission from an HIV-infected mother to her infant through breast-feeding. Strong evidence exists that recent infection with HIV and the duration of breast-feeding increases the risk of HIV transmission[20,21,22], but only 5% and 9% respectively of the health care workers were aware of the association. Several studies indicated that mastitis almost doubles the vertical transmission rate of HIV[9,22], but only 9% of the health care workers were aware of the association. This poses a serious problem for the mothers of the Gert Sibande District who choose to breast-feed, because they could have an increased transmission rate if they are not counselled by one of the 49% of the health care workers who have the appropriate knowledge. Another factor that must also be taken into consideration is that, even though the health care workers might possess the knowledge, it does not necessarily mean that they share this knowledge with the mothers.

In an effort to reduce the risk of HIV transmission through breast-feeding, health care workers should ensure that efficient breast-feeding skills, including correct positioning and good latching, are established immediately after birth when breast-feeding starts within the first 30 minutes[21]. The findings of this study indicated that it was mostly chief professional nurses and health care workers who had obtained their qualifications between 2000-2004 who knew the correct positioning of an infant to the mother's breast, and mostly chief professional nurses who knew the correct latching of an infant to a mother's breast and that a mother should breast-feed on demand. Moreover, the fact that not all the health care workers knew that a mother must be discouraged from mixed-feeding regardless of whether she is breast-feeding or formula-feeding is a major concern. Indeed, all the health care workers from Albert Luthuli, only 20% of the health care workers from Lekwa and Dipaleseng and the majority of health care workers in the other municipal areas knew that a mother must be discouraged from mixed-feeding

(Appendix M). This finding is of particular importance in view of the fact that mixed-feeding has been reported to double the risk of post-natal HIV transmission[15].

With regard to formula-feeding, only 37% of the health care workers knew the average amount of formula a term infant needed per day and only 56% knew how many feeds the average amount of formula feeding should be divided into per day. It was only in Albert Luthuli and Msukaligwa that more than 80% of the health care workers knew the average amount of formula a term infant needed per day and in the rest of the municipal areas approximately 40% of the health care workers answered correctly (Appendix M). In relation to these findings, it is of importance to note that in a randomised clinical trial in Nairobi it was found that breast-fed infants had better nutritional status than those receiving formula-feeding[34] and therefore it is of great concern that less than half of the health care workers knew the correct amount of formula, needed per day by a term infant. The Nairobi study also found better growth in breast-fed infants and highlighted the importance of nutritional counselling for mothers who choose formula-feeding[34]. Another concern is that not one of the health care workers could explain all seven basic steps of preparing a formula feed safely in this study. Most health care workers in all the municipal areas did not teach mothers to keep the boiled water covered while cooling. Most of the health care workers who taught mothers to use a cup to feed the formula feed were located in Seme and Msukaligwa , and most of the health care workers who taught mothers to wash the utensils after preparing the formula feed were located in Albert Luthuli and Msukaligwa (Appendix M), a situation in need of urgent intervention.

4.3. MOTHERS

The findings of the present study indicates that, although most mothers indicated that breast-feeding was the feeding option better accepted in their community, most were formula-feeding their infants, even though half indicated that if they were to formula-feed their infants, the community would suspect that they were HIV-infected. In most cases, family members did not play a decisive role regarding infant feeding options. Mothers mostly based their decision regarding infant feeding options on the information received

from the health care workers. Most mothers practised good breast-feeding practices, such as initiating breast-feeding within 30 miutes after birth and although most mothers were helped with lathcing teqniches they still experienced breast-feeding problems that was not necessarily addressed correctly, if at all addressed. Most mothers indicated that the preparation of a formula-feed was either explained or demonstrated to them. The quality of this training is questionable, because of lack of knowledge (of health care workers), equipment and space for demonstrating safe preparation of formula, as well as the fact that not one mother could explain the procedure correctly. Water appeared to be readily available, but some form of fuel to prepare the formula-feed was not always available. Free formula influenced some mothers to rather formula-feed their infants than breast-feed and substitutes for formula-feeds (when unavailable) resorted to solid foods unsuitable for infants younger than four months old.

The mothers who participated in the study were mostly Zulu-speaking women of approximately 28 years old.

Contrary to health care workers who mostly breast-fed their infants, the majority of mothers (62%) in the sample chose formula-feeding. Only 18% breast-fed their infants and 20% mix-fed their infants. Formula-feeding was most prevalent in all the municipal areas except Seme (Appendix M), where mixed-feeding was most prevalent. Mixed-feeding is currently a very important issue[11, 14, 22, 23] that must be addressed and should be targeted for urgent intervention since the available evidence indicates that it carries the highest risk of MTCT[11, 14, 22, 23]. It is also of interest that very few of the mothers in the sample - mostly those from Mkhondo, Lekwa and Dipaleseng and especially in the Highveld East (Appendix M) - reported that they had been influenced by a family member to practise an alternative infant feeding option to what the mother had chosen. This is an important finding which highlights the fact that it is not only mothers who should be educated on infant feeding options in the context of HIV/AIDS, but also communities should be afforded the same opportunity, especially since the majority of the mothers (71%) reported that breast-feeding was better accepted in their communities but most of the mothers (62%) were formula-feeding their infants.

Dorosko and Rollins[36] who found that, although all the women in their study reported washing their hands before preparing the formula, none of them were actually observed to wash their hands before preparation of the formula during home visits[36]. What is also of concern in the present study is the incorrect dilution of formula milk followed by some mothers, a practice that is well known to be associated with serious health risks (such as gastroenteritis and malnutrition) and fatalities[37]. It would thus appear that the training of health care workers in the safe preparation of formula feeds is also in need of urgent and appropriate intervention.

In line with findings from KwaZulu-Natal, only a small number (5%) of the mothers reported using a feeding cup instead of a bottle. The reasons for the low prevalence of cup feeding were not identified in this study, but they may be similar to those identified in KwaZulu-Natal, namely infants either do not like to drink formula from a cup or refuse to do so[36]. Moreover, none of the mothers reported washing the utensils after preparation of the formula feed, which is a cause for concern in terms of hygiene. The availability of water, fuel and time have been identified as important constraints for most women preparing formula feeds[36]. In the present study all the mothers reported having clean water available, and only mothers from Seme, Lekwa and Dipaleseng and Mskukaligwa (Appendix M) did not always have a source of fuel, such as gas, paraffin, wood or electricity available. Most (88%) of the mothers reported that they had lots of time available and prepared each feed for their infant separately, which was also the case in the study done in KwaZulu-Natal, where the majority of the mothers reported to mix only one feed at a time[36].

The disadvantage of free formula has been reported to compromise the free and reasoned decision on infant feeding according to the social and economic circumstances of HIV-infected women[1]. In the present study 24% of mothers acknowledged that they chose to formula-feed their infants because the PMTCT Programme provided them with free formula. This was also the case in the study in Cape Town, which reported that only 25,8% of the mothers agreed that the free provision of formula influenced their decision on infant feeding options[3]. However, the significant implications of mothers not always

having formula available to feed their infants should be seen in the light of the alternative foods mother use in this study (water, tea, cow's milk, soft porridge) to feed their infants (all ≤ 4 months), practices that are to be strictly discouraged and form another focus of needed intervention.

4.4. LIMITATIONS OF THE STUDY

1. The inclusion of only literate mothers in the study was decided upon because of the sensitivity towards the HIV infection, and the need to encourage mothers to feel free to reflect their true situation, while ensuring confidentiality. This however does restrict the population in which the results can be contextualised.

2. The detailed explanation of the study purpose and objectives given to the health care workers and the mothers, as well as certain questions in the questionnaire, such as "Choose only one answer" and the use of the Likert scale may have led to forced responses, which together with the use of convenience sampling could have resulted in bias.

3. The once-off, self-administered questionnaires could be criticised as not being the ideal way of gathering the information in this study since it restricts one to only the information on the questionnaire; it might, for instance have been more appropriate to use semi-structured interviews or exit interviews or observations with the once-off, self-administered questionnaires. However, all methods of data collection have some degree of limitations and after considering the limitations of the other methods and all the logistical aspects of this study such as time and resources (as well as the sensitivity of the subject and the level of confidentiality), it was decided that once-off, self-administered questionnaires would be the most appropriate method of data collection for this study. The once-off, self-administered questionnaires also provided for certain aspects used in reflective counselling, such as open responses[52].

4. The investigator was restricted in what part of the data collection she could do herself, as only a limited amount of official time was available for research purposes. The investigator therefore had to rely on several colleagues – all with equally full schedules – for data collection. Some colleagues were more dedicated than others, which resulted in an uneven distribution of data collected in the different municipal areas.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

5.1. CONCLUSIONS

The findings of this study indicate that although the attitude of health care workers towards the PMTCT Programme was found to be positive, issues mentioned, such as lack of resources, should be addressed. As such this study confirms, and extends, previous findings in relation to over-worked health care workers being unable to spend quality time with the mothers and support from superiors would create a more productive working environment[58].

Health care workers are the crucial link between practice and policy[60]. The findings of this study indicate that a significant proportion of health care workers appear to have a preference for a certain infant feeding option for HIV-infected women. It will, therefore, be difficult for mothers to make an informed decision even if health care workers feel they can remain neutral in a counselling session with a mother. Poor quality of counselling[59] should be an issue at the top of the priority list of all policy makers, and lack of resources definitely contributes to poor quality of counselling.

The knowledge of the health care workers regarding infant feeding options is definitely inadequate and the success of the PMTCT Programme depends on health care workers giving correct information[54]. One cannot expect the mothers to know what to do and how to do it if their counsellors do not know.

The fact that there were mothers who were mixed-feeding underscores the importance of the need for continuous education and support for PMTCT of HIV. Every mother has the right to be educated, advised and helped whenever needed and, as was shown in this study, it would not appear to be the case. The management of the Gert Sibande District, the Mpumalanga Province and the health care workers themselves should develop strategies which can improve the situation. The knowledge and practices of both the health care workers and the mothers regarding the preparation of the formula feed should

be addressed urgently. In general, it seems that Seme, Lekwa and Dipaleseng are high risk areas regarding mothers' practices of infant feeding and the shortcomings should be addressed accordingly.

The attitude, personal preferences, knowledge and resources available to health care workers, influenced the decision made by mothers regarding infant feeding options and seeing that most mothers made their decision, based on information provided by health care workers, it is concluded that mothers can only make an informed decision about infant feeding options if they are advised appropriately by well trained, equipped and informed health care workers.

5.2. RECOMMENDATIONS

1. All PMTCT counsellors should be exposed to appropriate and comprehensive training including both the VCT and 18-hour lactation management course, in addition to the 5-day PMTCT course. Courses should be structured in such a manner that health care workers attending these courses undergo an evaluation process at the end of each course to ensure that they have the appropriate knowledge and skills to counsel potential clients.

2. Serious consideration should be given to introducing examinations at the end of each course in order to ensure that the health care workers substantiality met the goal of the training. Health care workers who do not pass the examination should not be allowed to counsel. In light of the fact that most mothers make their decision regarding infant feeding options based on the information received from the health care worker in the counselling session, it is of paramount importance that the Province ensures that PMTCT counsellors are appropriately qualified in this field.

3. Motivation of health care workers is very important for successful implementation of any initiative[57] and, as was shown in a study in Gaborone,

Botswana, negative attitudes of health care workers form a barrier which prevents mothers from participating in the PMTCT Programme[64]. The management of the Gert Sibande District should seek to develop strategies in which to motivate health care workers to give their absolute best towards the PMTCT Programme. Possible ways of improving attitudes of health care workers towards the PMTCT Programme could be achieved by introducing selection criteria for training, which relate to the health care worker's interest and past experience.

4. Health care workers should be given the necessary teaching aids so as to enable them to successfully implement the skills they acquired during training. Also extremely important would be to employ staff in order for the health care workers to concentrate on PMTCT counselling as their main, or – if possible – only duty.

5. Although the present study showed that the personal preference of the health care workers could influence the decision made by the mother regarding infant feeding options, more research is needed to determine the outcome the personal preference of health care workers has on the decision of the mother regarding infant feeding options. The Department of Health should support such studies.

6. Appropriate educational material and equipment for the correct preparation of formula feeding should be created and provided and integration at the national and provincial level of any such efforts should be achieved.

7. The Mpumalanga Province should allocate sufficient funds for training, since the costs of sustained, high quality and resource-intense[65] training is often underestimated.

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APPENDICES

APPENDIX A

EXTRACT OF A COMPREHENSIVE PACKAGE OF CARE FOR THE PREVENTION OF MOTHER-TO-CHILD TRANSMISSION OF HIV PROTOCOL IN RELATION TO THE RECOMMENDED INFANT FEEDING OPTIONS

2. Objectives of the Prevention of Mother-To-Child Transmission of HIV Project (PMTCT)

Specific objectives:

The specific objectives of the PMTCT project are to assess:

- the feasibility of providing counselling on safe infant feeding practices for HIV-infected women in clinics offering routine ANC services;
- the impact of infant feeding counselling on the decision of feeding practices among HIV-infected mothers.

Strategies for PMTCT project implementation:

The project will strive to achieve these objectives by offering, at selected clinics, a key technical component service aimed at preventing transmission of HIV from mother to child. These technical components are the provision of:

- Replacement feeding (RF) while minimising associated risks or safe breast-feeding and early cessation.

3. Preparations

Training

Appropriately trained staff at provincial and site levels are a prerequisite to a successful PMTCT Programme. The PMTCT Programme will conduct an assessment of training

needs at all levels; develop appropriate training at all levels; develop appropriate training prior to implementation; assess and monitor ongoing training needs; and develop mechanisms for ongoing training.

A core-training package consisting of the components mentioned below will be made available:

- **Infant feeding:** Appropriate health care workers will be provided with training on infant feeding and how to discuss infant feeding options with participants in the PMTCT Programme. The training will include the advantages and disadvantages of infant feeding options for HIV-infected women. A training manual is currently in production. The *Mother-To-Child Transmission of HIV/AIDS (MTCT) trainers guide,* the Department of Health's (DOH) Guidelines: *Feeding of infants of HIV-infected women,* the *South African Breast- feeding Guidelines for Health Care Workers* and the DOH Guidelines for *Maternity Care in South Africa* provide information on both infant feeding and HIV.

4. Interventions

Establishing safe infant feeding practices

The DOH Guidelines: *Feeding of infants of HIV-infected women,* and the *South African Breast Feeding Guidelines for Health Workers* provide recommendations on the establishment of safe infant feeding practices in case the mother is HIV-infected. The latter suggests that: *In an ideal world where safe and adequate formula feeding is possible, and where ongoing support for mother and monitoring of an infant is available, formula-feeding is the principal recommended method of feeding. The risks of feeding the infant with breast milk substitutes (mainly formula) must be balanced against the risks of HIV transmission through breast-feeding. It is important to avoid being dogmatic, but to assess every risk factor carefully and explore the extent and severity of any specific factor if present.* It further suggests that HIV-infected women who choose to breast-feed should be counselled and supported to breast-feed exclusively. Good breast-feeding techniques

should be ensured to reduce the risk of mastitis and nipple damage. Furthermore, DOH *South African Integrated Management of Childhood Illnesses (IMCI) clinical case management guidelines* state that HIV-infected women should be counselled to ensure good nutrition and to continue breast-feeding unless a safe alternative is available;

The South African discussion paper on *The Code of Marketing of Breast Milk Substitutes* does not clash with the current policy on infant feeding for HIV-infected women in that it acknowledges that there may be circumstances where infant formula needs to be used. It suggest that by strictly adhering to a number of recommendations, spill-over to the non-HIV-infected segment of the population and those who prefer to breast-feed will be avoided. These recommendations are: *information and educational material to ensure the proper use of infant formula; information about the social and financial implications of its use; the health hazards of unnecessary or improper use of infant formula and other breast milk substitutes. Feeding with infant formula should be demonstrated only by health workers or other community workers if necessary and only to childminders who need to use it.*

- **Pre-natal counselling on safe infant feeding practices**

It is crucial that safe infant feeding practices are established, that protect the infant against mortality and morbidity, and decrease mother-to-child transmission of HIV. Throughout the ante-natal period, there will be ongoing counselling by the health care workers or, in other cases, trained lay counsellors on feeding options. Such counselling will involve the pregnant woman herself and, where possible and acceptable, will include a member of the family. Family members influence how infants are fed. Discussions with them on the importance of exclusive breast-feeding or exclusive formula-feeding may ensure that women practise these feeding practices (both of which are extremely uncommon behaviours), and that family members are supportive of these feeding behaviours.

Ante-natal discussion should therefore include the following:

- the risks of HIV transmission through breast-feeding;
- the benefits of breast-feeding;
- the risks of mixed-feeding;
- formula-feeding options: Availability/access to safe, clean water, infant formula; utensils and other equipment required for safe preparation of replacement milk; safe administration of replacement milk using a cup rather than a bottle; for how long reconstituted replacement feeds can be kept;
- the feasibility and acceptability of exclusive formula-feeding for the woman. This should focus on how the woman will implement this decision once the infant is born – taking in account social, financial and environmental factors; and
- the feasibility and acceptability of exclusive breast-feeding for the woman (discussion points as above).

These discussions will enable women to make an informed decision about infant feeding.

Post-natal counselling on safe infant feeding practices

Before the infant attaches to the breast, the health care worker will confirm the mother's infant feeding decision and will assist the mother according to her decision.

For women who have chosen to formula feed, the following will be addressed:

- correct and safe preparation of the feed, including the benefits of cup-feeding , will be discussed prior to discharge and demonstrated in private where possible. At some sites a pamphlet on safe infant feeding practices will be distributed; at least a two week supply of free commercial formula will be provided on discharge. The amounts dispensed will be recorded in the milk register as well as in the woman's file. Thereafter, formula milk will be dispensed at the local clinic for a period of six months; and
- the amount of formula dispensed will be recorded in the milk register at the clinic, as well as in the woman's file.

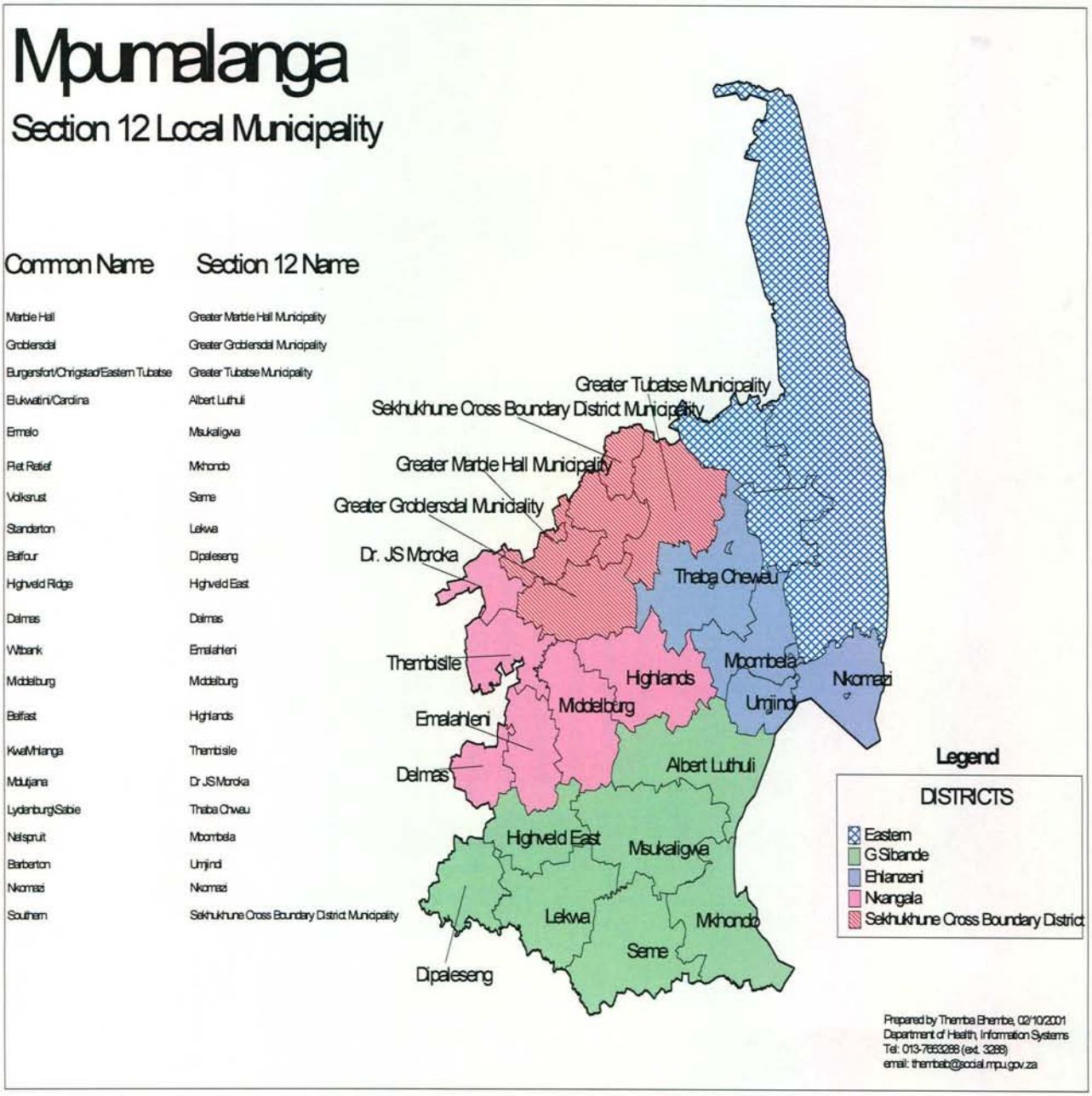
For women who have chosen to breast-feed exclusively:

- special attention will be paid to attachment and positioning of the infant at birth to prevent sore and cracked nipples, engorgement and mastitis;
- exclusive breast-feeding day and night and on demand for four months, will be discussed with the mother (and other family member if possible); and
- she will be reminded to wean the infant from the breast abruptly at four months;
- after four months she will be provided with infant formula for two months.

Women who are enrolled in the programme during labour or within 72 hours of delivery will be counselled on infant feeding options (as above) post-natally.

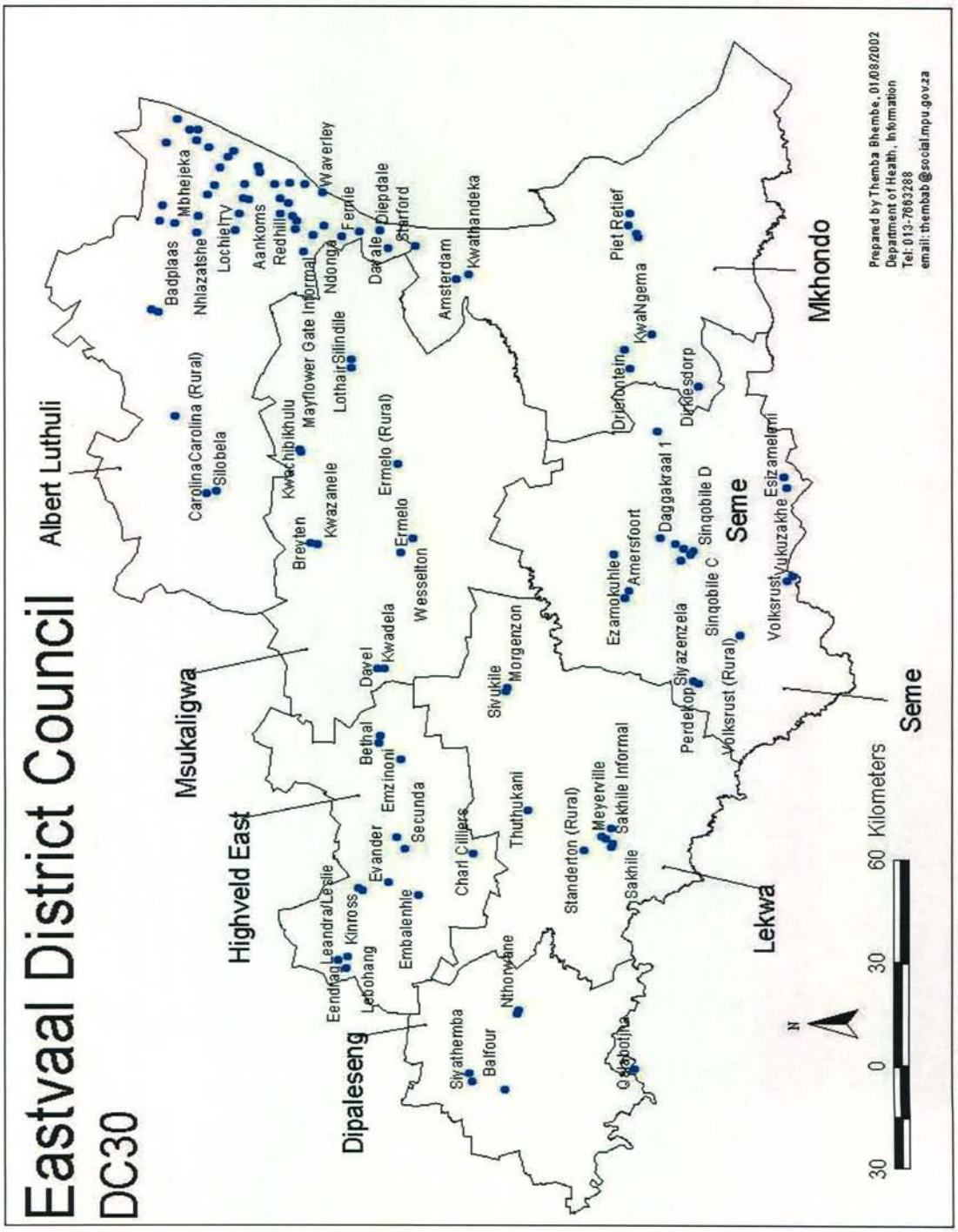
APPENDIX B

MAP OF THE MPUMALANGA PROVINCE, SOUTH AFRICA



APPENDIX C

MAP OF THE GERT SIBANDE DISTRICT, MPUMALANGA



APPENDIX D

PROGRAMME OF THE 5-DAY PMTCT TRAINING COURSE

Time	Monday	Tuesday	Wednesday	Thursday	Friday
07h45 – 10h00	Registration, Welcome, Introduction, Expectations, House rules, Course Objectives, Pre-Test	Recap Better Birth Initiative	Recap Building confidence Support skills Exercises Helping mother put infant on the breast	Recap Breast conditions Exercises Taking infant feeding history	Recap Maternal care and support
10h00 – 10h15	Tea	Tea	Tea	Tea	Tea
10h15-13h00	HIV/AIDS Basic science Epidemiology of MTCT of HIV ARV therapy in PMTCT context	Integrating PMTCT with PHC Services How breast-feeding works and breast milk composition	Clinical practice 1 Replacement feeding during the first six months Complementary feeding	Clinical practice 2 Feedback Common infant feeding problems	Follow-up on HIV-infected women and infants Community mobilization for PMTCT Operational issues in the District
13h00 – 13h45	Lunch	Lunch	Lunch	Lunch	Lunch
13h45 – 15h15	VCT Basic counselling skills Advantages of VCT Pre and post test counselling	Listening and learning skills Exercises	Counselling for infant feeding options	Formula feeding preparation including the practical	Post test and evaluation Course review Closing remarks
15h15 – 15h30	Tea	Tea	Tea	Tea	Tea
15h30 – 17h30	Revised obstetric practices during Antenatal, LABOUR, Post-natal	Overview of HIV and infant feeding options Assessing and observing a feed (breast /formula)	Exclusive breast-feeding and stopping early Expressing breastmilk	Teaching replacement feeding Video on low birth weight and discussions	Have a safe journey home

APPENDIX E

PMTCT SITE MANAGERS

Municipal area	Field workers	Hospital	PMTCT Site Manager	Clinic / Community Health Centre	PMTCT Site Manager
Mkhondo	Mrs A Davis RD (SA) (Investigator)	Piet Retief Hospital	Sr N Madlala	Amsterdam Clinic	Sr Naywo
				Driefontein CHC	Sr MJ Radebe
Albert Luthuli	Miss K Manaka RD (SA)	Embhuleni Hospital	Sr TG Simelane	Tjakastad Clinic	Sr L Hlatswayo
Seme	Mrs L Dube RD (SA)	Amajuba Hospital	Matron TAM Nkosi	Amersfoort Clinic	Sr R Fourie
				Daggakraal Clinic	Sr MM Shabalala
				Perdekop Clinic	Sr S Mkasi
				Volksrust Clinic	Sr S Grobler
Lekwa & Dipaleseng	Ms S Koekemoer RD (SA)	Standerton Hospital	Matron VF Opperman	Standerton Clinic	Sr M Shabalala
				Siyathemba Clinic	Sr A Motsoeneng
				Nthoroane Clinic	Sr H Bester
Highveld East	Miss I Smit RD (SA)	Evander Hospital	Sr vd Westhuizen	Embalenhle CHC	Sr N Magagula
				Lebaong CHC	Sr KE Mabena
	Ms B Marutla RD (SA)	Bethal Hospital	Sr KC Mabunda	Mzinoni Clinic	Sr B Mashloane
Msukaligwa	Mrs L Henin RD (SA)	Ermelo Hospital	Sr NN Mayila	Emthonjeni Clinic	Sr PN Mathenjwa
				Ermelo TLC	Sr Boshoff
				Tusiville Clinic	Sr Letwaba

APPENDIX F

ETHICS APPROVAL FROM THE FACULTY OF HEALTH SCIENCES, STELLENBOSCH UNIVERSITY, TYGERBERG, SOUTH AFRICA

UNIVERSITEIT-STELLENBOSCH-UNIVERSITY
jou kennisvennoot • your knowledge partner

16 March 2004

Mrs A Davis
C/o Prof D Labadarios
Department of Human Nutrition

Dear Mrs Davis

RESEARCH PROJECT : "PREVENTION FROM MOTHER-TO -CHILD TRANSMISSION PROGRAM: HOW "INFORMED" IS THE MOTHER'S DECISION REGARDING INFANT FEEDING OPTIONS IN MPUMALANGA, SOUTH AFRICA?"
PROJECT NUMBER : N04/03/050

It is my pleasure to inform you that the abovementioned project has been approved by the Manager: Research Development and Support (Tygerberg), in accordance with the authority given to him by the Committee for Human Research, and that you may start with the project. This approval will however be submitted at the next meeting of the Committee for Human Research for ratification, after which we will contact you again.

Notwithstanding this approval, the Committee can request that work on this project be halted temporarily in anticipation of more information that they might deem necessary to make their final decision.

In future correspondence, kindly refer to the above project number.

I wish to remind you that patients participating in a research project at Tygerberg Hospital will not receive their treatment free, as the PAWC does not support research financially.

The nursing staff of Tygerberg Hospital can also not provide extensive nursing aid for research projects, due to the heavy workload that is already being placed upon them. In such instances a researcher might be expected to make use of private nurses instead.

Yours faithfully

CJ VAN TONDER
RESEARCH DEVELOPMENT AND SUPPORT (TYGERBERG)
CJVT/cjvt

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Fakulteit Gesondheidswetenskappe • Faculty of Health Sciences

Verbind tot Optimale Gesondheid • Committed to Optimal Health
Afdeling Navorsingsontwikkeling en -steun • Division of Research Development and Support
Posbus/PO Box 19063 • Tygerberg 7505 • Suid-Afrika/South Africa
Tel: +27 21 938 9207 • Faks/Fax: +27 21 933 6330
E-pos/E-mail: cjvt@sun.ac.za

APPENDIX G

ETHICS APPROVAL FROM THE DEPARTMENT OF HEALTH, MPUMALANGA, SOUTH AFRICA

ADMINISTRATION

MPUMALANGA PROVINCE

No. 7 Government
Boulevard
Riverside Park Ext. 2
Building no. 3
Nelspruit
1200

Private Bag X11285
Nelspruit
1200
South Africa
Tel: 013-766 3297
Fax: 013-766 3472

Department of Health
INFORMATION MANAGEMENT & RESEARCH UNIT

DEPARTEMENT VAN GESONDHEID	LITIKO LETEMPILO	UMNYANGO WEZAMAPHILO

Enq: Martha Mokoena

Mrs Annemarie Davis
P.O. Box 990
Piet Retief 2380

21 May 2004

APPLICATION FOR RESEARCH PROJECT: PREVENTION FROM MOTHER TO CHILD TRANSMISSION PROGRAM. " HOW INFORMED IS THE MOTHER's DECISION REGARDING INFANT FEEDING OPTIONS IN MPUMALANGA, SOUTH AFRICA".

The Research Ethics Committee has approved your research proposal as there are no ethical issues of concern.

Kindly ensure that you provide us with your report once the research is completed.

Kind regards

M. G. Mokoena
pp. Dr S. Frerich
Chairperson – R&E Committee

APPENDIX H

APPROVAL FROM THE DISTRICT DIRECTOR, GERT SIBANDE DISTRICT

MPUMALANGA PROVINCIAL GOVERNMENT

Gert Sibande Health District
39 Jan van Riebeeck Street
Ermelo
2350
South Africa

Private Bag X9028
Ermelo
2350
Tel: 017 - 811 1642
Fax: 017 - 819 2505

Department of Health and Social Services

TO: All Managers of PMTCT sites

FROM: The District Director

RE: PMTCT Research Project

A research project called: " Prevention from Mother-to-Child Transmission Program: How "informed" is the mother's decision regarding infant feeding options in Mpumalanga, South Africa?" has been approved by the Ethics Committee, Faculty of Health Sciences, Stellenbosh University and also by the Ethics Committee of the Department of Health, Mpumalanga.

The research aim of the study is to determine the impact of the knowledge, personal preference and attitude of health workers, as well as the resources available to them, on the mother's ability to make an informed choice about infant feeding options, AND to determine the mother's experience regarding infant feeding options in both the counseling session with the health worker and in the community.

All PMTCT site managers are hereby kindly requested to assist Mrs. A. Davis (investigator) with data collection during the month of June/July 2004. At your facility health workers (selected randomly) will be asked to complete a questionnaire. You are also requested to assist in the data collection process where all mothers that are placed on the PMTCT program or come back for follow-ups during the month of data collection must be asked to take part in the study.

Your co-operation in this matter will be highly appreciated

Mtsweni 25/5/04

Mrs. N. Mtsweni
District Director: Gert Sibande District

We care **Do you?**

APPENDIX I

QUESTIONNAIRE FOR HEALTH CARE WORKERS

Dear Health Care Worker

Prevention of Mother-to- Child Transmission Programme:
How "informed" is the literate mother's decision regarding infant feeding options in the Gert Sibande District, Mpumalanga , South Africa?

I am a post-graduate student at the University of Stellenbosch. I am busy with my research project for Masters in Nutrition and will appreciate it if you would be so kind as to participate in the study. The project has two aims. Firstly to determine the impact of the knowledge, personal preference and attitude of health workers as well as the resources available to them, on the mother's ability to make an informed decision about infant feeding options and secondly to determine the mother's experience regarding infant feeding options in both the counselling session with the health worker and in the community.

I have compiled a research questionnaire, which I would be grateful if you could fill in honestly. This means that I want to determine your point of view and how you feel about the programme. Therefore when you answer the questions please be honest and do not try to give what you think is the right answer, but how you yourself experience it in reality.

I sincerely appreciate your help.

Thank you

Annemarie Davis RD (SA)
Piet Retief Hospital
Piet Retief
Mpumalanga
Tel: 017 826 2222

Section A Subject number ☐

Please mark the appropriate box with an "X"

1) Gender:

Female	☐
Male	☐

2) Age:

< 25 years	☐
25-34 years	☐
35-44 years	☐
45-54 years	☐
55+ years	☐

3)

Enrolled nurse assistant	☐
Enrolled nurse	☐
Professional nurse	☐
Senior Professional nurse	☐
Chief Professional nurse	☐
Lay counsellor	☐

4) When did you obtain your highest qualification?

2000 – 2004	☐
1995 – 1999	☐
1990 – 1994	☐
1985 – 1989	☐
1980 – 1984	☐
1975 - 1979	☐
1970 - 1974	☐
1965 - 1969	☐
1960 - 1964	☐
Other - specify	_____

5) When did you complete the 5-day PMTCT course? Please provide the specific dates.

_____

6) Is your facility Baby Friendly?

Yes	☐
No	☐
Not sure	☐

7) Have you completed the 18-hour/3-day lactation management course?

Yes	☐
No	☐

8) Have you done a voluntary counselling and testing course?

Yes	☐
No	☐

9) How many women on average do you counsel per week?

0 – 5	☐
6 – 10	☐
11 – 15	☐
> 15	☐

Section B

How do you feel about the following statements? (Please mark the appropriate box with an "X")

		Strongly Disagree	Disagree	Agree	Strongly Agree
	Statement	1	2	3	4
1)	In general the PMTCT Programme with regard to the infant feeding option counselling is a good Programme.				
2)	The 5-day PMTCT course enabled me to provide the mother with sufficient information to be able to make an informed decision related to infant feeding options.				
3)	The 5-day PMTCT course presented me with enough skills to be able to communicate with the patient in such a manner that I will not influence the decision the mother has to make relating to infant feeding options.				
4)	The 5-day PMTCT course expects of me to counsel the mother on the advantages and disadvantages of both breast-feeding and formula-feeding without influencing the decision of the mother in any way.				
5)	The 5-day PMTCT course expects of me to support the mother with whatever option she chooses.				
6)	The 5-day PMTCT course expects of me to educate the mother on the decision that she has made , that is how to breast- or formula-feed.				
7)	What is expected of me is practical/achievable in my working environment.				

8) If you disagreed/strongly disagreed in question 7 give at least 3 reasons why you feel that it is not practical/achievable

_____

_____

9) Give at least 3 solutions to the problem, that in your opinion will make the expectations of the programme more practical/achievable

_____

_____

Section C

Please mark the appropriate box with an "X"

1) Do you have children?

Yes	☐
No	☐

2) If you are a female and you answered "yes" to question 1 did/do you breast-feed or formula-feed your child(ren)?

Breast-feed	☐
Formula-feed	☐
Both	☐

3) If you are a male and you answered "yes" to question 1 do you prefer the mother of your child(ren) to breast-feed or formula-feed ?

Breast-feed	☐
Formula-feed	☐

4) Before you attended the 5-day PMTCT course your opinion about infant feeding options for HIV positive mothers was:

Mother should breast-feed	☐
Mother should formula-feed	☐
Neutral, it is the mother's decision	☐

5) Did your opinion change after attending the 5-day PMTCT course?

Yes	☐
No	☐
Not sure	☐

6) If you answered yes in question 5 what type of change occurred?

Breast-feeding to formula-feeding	
Formula-feeding to breast-feeding	
Neutral to formula-feeding	
Breast-feeding to neutral	
Formula-feeding to neutral	
Neutral to breast-feeding	

7) If you have a preference for breast-feeding or a preference for formula- feeding can you stay neutral in a counselling session with the mother?

Yes	
No	
Not sure	

8) If you answered "no" or "not sure" to question 7 do you think that it is in the mother's best interest that you are to consult her and influence her decision?

Yes	
No	
Not sure	

9) In your opinion, does the mother have the right to make her own informed decision?

Yes	
No	

10) In your opinion, are mothers capable of making such an important decision?

Yes	
No	

Section D

Please mark the appropriate box with an "X"

1) My facility has enough staff and therefore sufficient time can be spent with a mother to counsel her on infant feeding options.

Yes ☐
No ☐

2) During the 5-day PMTCT course you were provided with educational materials like the feeding option cards to help you explain the feeding options to the mother.

2.1) Do you use these cards during the counselling session?

Yes ☐
No ☐

2.2) Are there enough cards for you to use?

Yes ☐
No ☐

3) Once the mother has chosen breast-feeding as her feeding option:

3.1) Do you need any other educational material (other than the feeding option cards) to be able to explain the necessary information to a mother?

Yes ☐
No ☐

3.2) If you answered yes in question 3.1. please indicate what type of material/equipment is needed

_____

_____

_____

_____

4) Once the mother has chosen to formula feed her infant, you are responsible for demonstrating how to prepare the formula.

4.1) Do you demonstrate to the mother how to prepare the formula?

Yes ☐
No ☐
Sometimes ☐

4.2) If not or only sometimes, give a reason (s) why

_____
_____
_____

4.3) Do you let the mother prepare the formula herself after demostrating the procedure to her?

Yes ☐
No ☐
Sometimes ☐

4.4) If not, or only sometimes, give a reason (s) why

_____
_____

5) Which of the following equipment do you have available in your facility to do this demonstration

Item	Yes	No
Hand wash basin.		
Soap.		
Paper towels to dry your hands.		
A marked cup or glass to measure the water.		
A scoop to measure the formula.		
A kettle (or any other means) to boil the water.		
A knife to flatten the formula on the scoop.		
A spoon to stir the formula.		

Section E

Please mark the appropriate box with an "X" (Only choose one answer per question)

1) Once the mother has chosen to breast-feed her infant, which of the following factors might possibly increase her risk of HIV transmission to her infant and must be pointed out to the mother?

Recent infection with HIV	
Infection with STD	
Duration of breast-feeding	
Mixed-feeding	
Breast conditions like cracked nipples or mastitis	
Condition of the infant's mouth	
All of the above	
None of the above	

2) When should the mother start breast-feeding?

Within 30 minutes after birth	
Within 1 hour after birth	
It does not matter when the mother starts breast-feeding	

3) To position the infant correctly at the breast the infant must be held:

With his/her head and body straight	
Facing the mother's breast, with his/her nose opposite her nipple	
With his/her body close to her body	
With his whole body supported, not just his neck and shoulders	
All of the above	
None of the above	
In any way that is comfortable for the mother	

4) A good attachment of the infant to the breast is indicated by:

Lower lip curled outward	
Infant's chin touching breast	
Infant's mouth covering most of areola, not just nipple	
All of the above	
None of the above	

5) The mother must be encouraged to breast-feed :

3 hourly	☐
When she thinks the infant is hungry	☐
On demand	☐
All of the above	☐
None of the above	☐

6) Once the mother has made her decision either to breast-feed or formula-feed , should she under any circumstances be encouraged to mix-feed that is add any other food or drink to supplement the child's diet?

Yes	☐
No	☐

7) When a mother has mastitis your advice to her regarding breast-feeding would be:

To continue breast-feeding on the uninfected breast and discard all the breast milk expressed from the infected breast	☐
Stop breast-feeding and start formula-feeding	☐

8) What is the average amount of commercial infant formula an infant will need per day?

50 ml/kg/day	☐
100 ml/kg/day	☐
150 ml/kg/day	☐
200 ml/kg/day	☐
None of the above	☐

9) In how many feedings per day should the total amount of formula be divided?

2-4	
4-6	
6-8	
8-10	
None of the above	

10) Name the 7 steps in preparing a commercial infant formula:

Vraelys vir gesondheidswerkers

Geagte Gesondheidswerker

Program vir die voorkoming van moeder-tot-kind-oordrag (VMTKO): Hoe "ingelig" is die geletterde moeder se besluit rakende voedingsopsies vir babas in die Gert Sibande distrik, Mpumalanga , Suid-Afrika?

Ek is 'n nagraadse student aan die universiteit van Stellenbosch. Ek is besig met my navorsingsprojek vir 'n meestersgraad in Voeding en sal dit waardeer as u so vriendelik sal wees om deel te neem aan die studie. Die projek het twee doelwitte: Eerstens om vas te stel wat die impak is van kennis, persoonlike voorkeur en ingesteldheid van gesondheidswerkers asook die bronne waaroor hulle beskik op die moeder se vermoë om 'n ingeligte besluit te neem oor voedingsopsies vir babas, en tweedens om vas te stel wat die moeder se ervaring is omtrent sodanige voedingsopsies in beide die beradingsessie met die gesondheidswerker en in die gemeenskap.

Ek sal dankbaar wees as u die navorsingsvraelys wat ek saamgestel het eerlik sal voltooi. Ek wil vasstel wat u sienswyse omtrent die program is, daarom versoek ek u om die vrae eerlik te beantwoord en nie die antwoord wat u as "reg" beskou, te voorsien nie. Baseer dus u antwoord op hoe u dit werklik beleef.

Ek waardeer u hulp opreg.

Baie dankie

Annemarie Davis RD (SA)
Piet Retief Hospitaal
Piet Retief
Mpumalanga
Tel: 017 826 2222

Onderwerp nommer ☐

Afdeling A

Merk asseblief die toepaslike blokkie met 'n "X"

1) Geslag:

Vroulik	☐
Manlik	☐

2) Ouderdom:

< 25 jaar	☐
25-34 jaar	☐
35-44 jaar	☐
45-54 jaar	☐
55+ jaar	☐

3)

Ingeskrewe verpleegassistent	☐
Ingeskrewe verpleegster	☐
Professionele verpleegster	☐
Senior Professionele verpleegster	☐
Hoof Professionele verpleegster	☐
Lekeberader	☐

4) Wanneer het u u hoogste kwalifikasie verkry?

2000 – 2004	☐
1995 – 1999	☐
1990 – 1994	☐
1985 – 1989	☐
1980 – 1984	☐
1975 - 1979	☐
1970 - 1974	☐
1965 - 1969	☐
1960 - 1964	☐
Ander - spesifiseer	_____

5) Wanneer het u die 5-dag VMTKO kursus voltooi? Verskaf asseblief die spesifieke Datums.

---

6) Is u fasiliteit babavriendelik?

Ja	☐
Nee	☐
Onseker	☐

7) Het u die 18-uur / 3-dag laktasiebestuurskursus voltooi?

Ja	☐
Nee	☐

8) Het u 'n vrywillige toetsing- en beradingskursus (VCT) voltooi?

Ja	☐
Nee	☐

9) Hoeveel vroue beraad u gemiddeld per week?

0 – 5	☐
6 – 10	☐
11 – 15	☐
> 15	☐

Afdeling B

Hoe voel u oor die volgende stellings? Merk die toepaslike blokkie asseblief met 'n "X"

		Stem glad nie saam nie	Stem nie saam nie	Stem saam	Stem sterk saam
	Stelling	1	2	3	4
1)	Met betrekking tot berading vir babavoeding is die VMTKO-program oor die algemeen 'n goeie program.				
2)	Die 5-dag VMTKO-kursus het my in staat gestel om die moeder met genoeg inligting te voorsien om 'n ingeligte keuse te maak oor voedingsopsies vir babas.				
3)	Die 5-dag VMTKO-kursus het my met genoeg vaardighede toegerus om met die pasiënt op so 'n manier te kommunikeer dat ek nie die keuse wat die pasiënt oor voedingsopsies vir babas moet neem, sal beïnvloed nie.				
4)	Die 5-dag VMTKO-kursus verwag van my om die pasiënt te beraad oor die voordele en nadele van beide borsvoeding en formulevoeding sonder om die pasiënt se besluit te beïnvloed.				
5)	Die 5-dag VMTKO-kursus verwag van my om die moeder te ondersteun watter keuse sy ook al maak.				
6)	Die 5-dag VMTKO-kursus verwag van my om die moeder opleiding te gee vir die keuse wat sy uitgeoefen het, naamlik hoe om borsvoeding of formulevoeding te gee				
7)	Binne my werksomgewing is dit wat van my verwag word prakties / uitvoerbaar.				

8) Indien u nie saamstem, of glad nie saamstem met die stelling in vraag 7 nie, gee ten minste 3 redes waarom dit nie prakties / uitvoerbaar is nie.

_____

_____

_____

9) Gee ten minste 3 oplossings vir die probleem wat in u opinie die verwagtings van die program meer prakties / uitvoerbaar sal maak.

_____

_____

_____

_____

Afdeling C

Merk asseblief die toepaslike blokkie met 'n "X"

1) Het u kinders?

Ja	☐
Nee	☐

2) Indien u 'n vrou is en "ja" geantwoord het op vraag 1, het u u kinders geborsvoed of formulevoeding gebruik?

Borsvoeding	☐
Formulevoeding	☐
Beide	☐

3) Indien u 'n man is en "ja" geantwoord het op vraag 1, sou u verkies dat die moeder van u kinders borsvoed of formulevoeding gebruik?

Borsvoeding	☐
Formulevoeding	☐

4) Wat was u opinie oor babavoedingsopsies vir HIV-positiewe moeders voordat u die 5-dag VMTKO-kursus bygewoon het?

Die moeder moet borsvoed	
Die moeder moet formulevoeding gee	
Neutraal, dit is die moeder se keuse	

5) Het u opinie verander nadat u die 5-dag VMTKO-kursus bygewoon het?

Ja	
Nee	
Onseker	

6) Indien u ja geantwoord het op vraag 5, hoe het u opinie verander?

Van borsvoeding na formulevoeding	
Van formulevoeding na borsvoeding	
Van neutraal na formulevoeding	
Van borsvoeding na neutral	
Van formulevoeding na neutraal	
Van neutraal na borsvoeding	

7) Indien u 'n voorkeur het vir borsvoeding, of 'n voorkeur het vir formulevoeding, kan u neutraal bly in 'n beradingsessie met die moeder?

Ja	
Nee	
Onseker	

8) Indien u "nee" of "onseker" geantwoord het op vraag 7, dink u dis in die moeder se beste belang dat u haar beraad en haar besluit beïnvloed?

Ja	
Nee	
Onseker	

9) In u opinie, het die moeder die reg om haar eie ingeligte besluit te neem?

Ja	
Nee	

10) In u opinie, is moeders in staat om so 'n belangrike besluit te neem?

Ja ☐
Nee ☐

Afdeling D

Merk asseblief die toepaslike blokkie met 'n "X"

1) My fasiliteit het genoeg personeel en dus kan genoeg tyd met 'n moeder bestee word om haar te beraad oor voedingopsies vir babas.

Ja ☐
Nee ☐

2) Gedurende die 5-dag VMTKO-kursus is u voorsien van leermateriaal soos die voedingsopsiekaarte om u te help om die opsies aan die moeder te verduidelik.

2.1) Gebruik u hierdie kaarte tydens beradingsessies?

Ja ☐
Nee ☐

2.2) Is daar genoeg kaarte vir u om te gebruik?

Ja ☐
Nee ☐

3) Nadat die moeder besluit het om borsvoeding as voedingsopsie te gebruik:

3.1) Benodig u enige ander leermateriaal (anders as die voedingsopsiekaarte) ten einde in staat te wees om die nodige inligting aan die moeder te verduidelik?

Ja ☐
Nee ☐

3.2) Indien u "ja" geantwoord het op vraag 3.1, dui asseblief aan watter tipe materiaal of toerusting benodig word.

_____

_____

4) Nadat die moeder besluit het om formulevoeding te gebruik, is u verantwoordelik om aan haar te demonstreer hoe om die formule voor te berei.

4.1) Demonstreer u aan die moeder hoe om die formule voor te berei?

Ja ☐
Nee ☐
Soms ☐

4.2) Indien soms of glad nie, gee 'n rede of redes waarom nie.

_____
_____
_____

4.3) Laat u die moeder die formule self voorberei nadat u dit aan haar gedemonstreer het?

Ja ☐
Nee ☐
Soms ☐

4.4) Indien soms of glad nie, gee 'n rede of redes waarom nie.

_____
_____
_____

5) Watter van die volgende toerusting het u beskikbaar by u fasiliteit om hierdie demonstrasie te doen?

Item	Ja	Nee
Handwasbak.		
Seep.		
Papierhanddoeke om u hande mee af te droog.		
'n Afgemerkte koppie of glas om die water mee af te meet.		
'n Maatlepel om die formule mee af te meet.		
'n Ketel (of ander manier) om die water te kook.		
'n Mes om die formule gelyk te skraap in die maatlepel.		
'n Lepel om die formule mee te roer.		

Afdeling E

Merk asseblief die toepaslike blokkie met 'n "X" (U mag slegs een antwoord per vraag kies)

1) Watter van die volgende faktore wat aan die moeder uitgewys moet word, sal die risiko van moeder-kind HIV-oordrag verhoog indien sy besluit om die kind te borsvoed?

Onlangse infeksie met HIV	☐
Infeksie met 'n SOI (STD)	☐
Die tyd wat die borsvoeding volgehou word	☐
Gemengde voedingswyse	☐
Die toestand van die bors, soos gebarste tepels en mastitis	☐
Die toestand van die baba se mond	☐
Al die bostaande faktore	☐
Geen van die bostaande faktore	☐

2) Wanneer behoort die moeder met borsvoeding te begin?

Binne 30 minute na die geboorte	☐
Binne 1 uur na die geboorte	☐
Dit maak nie saak wanneer die moeder met borsvoeding begin nie.	☐

3) Om die baba korrek te posisioneer by die bors moet die baba gehou word met die:

Kop en liggaam reguit	☐
Met die gesig na die moeder se bors, met sy/haar neus regoor die moeder se tepel	☐
Met sy/haar liggaam naby die moeder se liggaam	☐
Met die baba se hele liggaam gesteun, nie net die nek en skouers nie	☐
Al die bostaande	☐
Geen van die bostaande	☐
Enige wyse wat vir die moeder gemaklik is	☐

4) Goeie aanhegting van die baba aan die bors word aangedui deur:

Die onderlip wat buitentoe gekrul is	☐
Die baba se ken wat die bors raak	☐
Die baba se mond bedek die meeste van die areola, nie net die tepel nie	☐
Al die bostaande	☐

5) Die moeder moet aangemoedig word om te borsvoed:

Elke 3 uur	☐
Wanneer sy dink die baba is honger	☐
Op aandrang/aanvraag	☐
Al die bostaande	☐
Geen van die bostaande	☐

6) Nadat die moeder besluit het om of te borsvoed of om formulevoeding te gebruik, moet sy onder geen omstandighede aangemoedig word om voeding te meng nie, dit wil sê om enige ander kos of vloeistof tot die kind se dieet by te voeg nie.

Ja	☐
Nee	☐

7) Indien 'n moeder mastitis het, sal u aanbeveling omtrent borsvoeding wees:

Om voort te gaan om die baba met die bors wat nie geïnfekteer is nie te voed, en al die melk van die geïnfekteerde bors weg te gooi	☐
Om op te hou met borsvoeding en oor te gaan tot formulevoeding	☐

8) Wat is die gemiddelde hoeveelheid kommersiële babaformule wat 'n baba per dag nodig het?

50 ml/kg/dag	☐
100 ml/kg/dag	☐
150 ml/kg/dag	☐
200 ml/kg/dag	☐
Geen van die bostaande	☐

9) In hoeveel voedings per dag behoort die totale hoeveelheid formule verdeel te word?

2-4	☐
4-6	☐
6-8	☐
8-10	☐
Geen van die bostaande	☐

10) Noem die sewe stappe vir die voorbereiding van kommersiële babaformule:

_____

_____

_____

_____

_____

_____

_____

_____

_____

IPHEPHA LEMIBUZO LOSOMPILO

Sompilo obekekile

Uhlelo lokuvimbela ukutheleleka okusuka kumama kuya enganeni:
Saziswe kahle kangakanani isinqumo sikamama ngendaba yokukhetha indlela yokondla ingane eGert Sibande District, eMpumalanga, eMzantsi Afrika?

Ngingumfundi wezifundo ezinomsila eNyuvesi yase Stellenbosch. Ngimatasa ngocwaningo lwezifundo zami ze Masters of Nutrition, futhi ngingajabula uma ungaba nomusa uhlanganyele kulolu phando. Uphando lunenhloso ezimbili. Okokuqala ukuthola ngomthelela wolwazi, okuthandwa ngumuntu nesimo sika sompilo nengcebo abayitholayo, ngokukhona kukamama ukwenza isinqumo esaziswe kahle ngezindlela zokondla ingane, okwesibili ukuthola ngolwazi lukamama mayela nezindlela zokondla ingane eseshinini yoluleko nosompilo nasemphakathini.

Ngihlanganise iphepha lemibuzo locwaningo engingajabula uma ungaligcwalisa ngokuthembeka. Lokhu kusho ukukthi ngifuna ukuthola umqondo wakho nokuthi uziva kanjani ngalolu hlelo. Ngalokho uma uphendula imibuzo ngicela uthembeke futhi ungazami ukuphendula ocabanga ukuthi kulungile, kodwa uphendule ngolwazi lwakho lwasekuhlaleni.

Ngiyalithakazelela uncedo lwakho

Ngiyabonga

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ISIGABA A

Inombolo Yesiguli ☐

Phawula ngo "X" ebhokisini elifanele

1) Ubulili:

Ngingowesifazane	☐
Ngingowesilisa	☐

2) Iminyaka

Ngaphansi kweminyaka engu-25	☐
Iminyaka engu 25-34	☐
Iminyaka engu 35-44	☐
In\minyaka engu 45-54	☐
Iminyaka engu 55+	☐

3)

Usekela mhlengikazi osemthethweni/obhalisile	☐
Umhlengikazi osemthethweni/obhalisile	☐
Umhlengikazi oneziqu	☐
Umhlengikazi ophezulu oneziqu	☐
Umhlengikazi ophakeme kakhulu ngeziqu	☐

4) Wazithola nini iziqu zakho eziphakeme zemfundo?

2000-2004	☐
1995-1999	☐
1990-1994	☐
1985-1989	☐
1980-1984	☐
1975-1979	☐
1970-1974	☐
1965-1969	☐
1960-1964	☐
Okunye - chaza	_____

5) Uqede nini izifundo zezinsuku ezinhlanu zePMTCT? Bhala umhla.

_____

6) Ingabe izixilongo zakho ziphephile emntwaneni na?

Yebo	☐
Cha	☐
Anginasiqiniseko	☐

7) Uluqedile na uhlelo lwamahora angu-18/lwezinsuku ezi-3 lwezifundo zelactation

Yebo	☐
Cha	☐

8) Ukwenzile yini ukuhlolwa ngokuzithandela nezifundo zokubonisana

Yebo	☐
Cha	☐

9) Bangaki abesifazane obabonisayo ngeviki ?

0-5	☐
6 - 10	☐
11 - 15	☐
<15	☐

ISIGSBA B

Uzizwa kanjani ngalezi sitatimende ezilandelayo? (Phawula ngo "X" ebhokisini elifanele)

		Angivumi nhlobo	Ngiya phika	Ngiya vuma	Esikhonk osini
	Isitatimende	1	2	3	4
1)	Ngokujwayelekile uhlelo lwe PMTCT mayela nokululekwa ngezindlela zokondla ingane linguhlelo				
2)	Izifundo zezinsuku ezinhlanu ze PMTCT zangisiza ukuba ngithole ulwazi ukunika umama ulwazi olwanele ukuze akwazi ukuthatha izinqumo ezifanele mayelana nezindlela zokondla ingane.				
3)	Uhlelo lwezinsuku ezinhlanu ze PMTCT zanginikeza ulwazi olwanele lokuthi ngikwazi ukukhulumisana nesiguli ngendlela yokuthi ngingasicindezeli ngesinqumo okumele asithathe sokondla.				
4)	Ngohlelo lwezinsuku ezinhlanu ze PMTCT ngilindeleke ukube ngikwazi ukweluleka isiguli ngobuhle nobubi bokuncelisa ibele nokupha ibisi lwethini ngaphandle kokucindezela isiguli ngesinqumo okumele sisithathe.				
5)	Ngohlelo lwezinsuku ezinhlanu lwe PMTCT ngilindeleke ukuba ngikwazi ukusizana nomama kunoma isiphi isinqumo asithathayo.				
6)	Ngohlelo lwezinsuku ezinhlanu lwe PMTCT ngilindeleke ukuba ngifundise kabanzi umama ngesinqumo asithathile, lokho kungukuncelisa noma ubisi lwethini.				
7)	Lokho okulindeleke kimi kungenzeka endaweni engisebenza kuyo.				

8) Uma uphikisana nombuzo 7 nikeza okungenani izizathu ezintathu ezenza ukuthi uphikisane nombuzo.

_____

_____

_____

9) Nika okungenani izixazululo zenkinga zibentathu obona ngathi zingaletha okulindelekile kubonakale njengokukhona nokunezithelo

_____

_____

ISIGABA C

Phawula ngo "X" ebhokisini elifanele

1) Unazo yini izingane?

Yebo	
Cha	

2) Uma ungowesifazane uthe yebo kulombuzo ongaphezulu, uyamuncelisa / wamuncelisa na noma umupha/wamupha ubisi lwethini umntwana wakho?

Uyancela	
Ubisi lwethini	
Esiwye isizathu	

3) Uma ungowesilisa ophendule yebo kumbuzo 1, ngabe ukhetha ukuthi umama wabantwana bakho ancelise noma aphe umntwana ubisi lwethini?

Ancelise	
Ubisi lwethini	

4) Ngaphambi kokuya kuhlelo lwezinsuku ezinhlanu lwe PMTCT wawucabanga ukuthi ukondliwa kwabantwana ngomama abanesandulela ngculazi kumele:

Bancelise	
Baphe ubisi lwethini	
Angikhethi, kuyisinqumo sikamama	

5) Ngabe indlela ocabanga ngayo ishintshile emva kokuya kuhlelo lwe zinsuku ezinhlanu lwe PMTCT?

Yebo	
Cha	
Angazi	

6) Uma uphendule yebo kumbuzo-5 bhala ushintsho olwenzekile?

Ngayeka ukuncelisa ngaya obisini lwethini	
Ngayeka ubisi lwethini ngaqala iukuncelisa	
Ngabese ngaqala ubisi lwethini	
Ngayeka ukuncelisa ngaba maphakathi nesinqumo	
Ngayeka ubisi lwethini ngangabengisazi	
Ngangingazi ngase ngiyancelisa	

7) Uma ukhetha ukuncelisa noma ukhetha ubisi lwethini ,uyakwazi yini ukungathathi icala ngenkathi ubonisana nomama wengane .

Yebo	
Cha	

8) Uma uphendula uthi cha kumbuzo 7 ngabe ucabanga ukuthi kubalulelkile yini ukuthi umufake incindezi umzali ekuthatheni isinqumo ngokondla umntwana wakhe?

Yebo	
Cha	

9) Ngokubona kwakho ngabe umama ounalo yini ilungelo lokuthatha isinqumo esinolwazi ngokwakhe ?

Yebo	
Cha	

10) Ngokwakho ukubona ngabe omama bangakwazi yini ukuthatha lesisinqumo esibalulekile na ngokwabo?

Yebo	
Cha	

ISIGABA D

Phawukla ngo "X" ebhokisini elifanele

1) Umtholampilo wethu unabasebenzi abanele yingakho isikhathi esanele singatshenziswa ngendlela nomama wengane ukubonisana naye ngokondla ingane yakhe.

Yebo ☐
Cha ☐

2) Ngesikhathi sohlelo lwezinsuku ezinhlanu lwe PMTCT unikezwe zonke izikhali zokufundisa njengamakhadi asiza ekuchazeleni umama ngendlela yokondla umntwana.

2.1) Uyawasebenzisa yini lamakhadi ngesikhathi sokululeka?

Yebo ☐
Cha ☐

2.2) Ngabe anele yini lamakhandi ukuwasebenzisa?

Yebo ☐
Cha ☐

3) Uma umama akhethe ukuncelisa njengendlela yakhe yokondla:

3.1) Ngabe udinga ezinye izikhali zokufundisa (ezinye ngaphandle kwamakhadi wokondla) ukuze ukwazi ukuchaza ulwazi olufunekayo kumama?

Yebo ☐
Cha ☐

3.2) Uma uthe yebo kumbuzo 3.1. yisho ukuthi yizikhali ziphi ezidingekayo

_____

_____

_____

_____

4) Uma umama ekhethe ukondla umtwana wakhe ngobisi lwasethinini, kukuwe ukuthi umkhombise ukuthi lulungiswa kanjani.

4.1) Uyambonisa yini umama ukuthi alwenze njani ubisi?

Yebo ☐
Cha ☐
Nqezinye izinsoko ☐

4.2) Uma ungakwenzi, nika isi(zi)zathu so(zo)kungakwenzi

_____

_____

_____

4.3) Uyamunika yini umama ithuba lokuthi alilungise ngokwakhe ubisi emva kokuthi umubonisile indlela yokulenza?

Yebo ☐
Cha ☐
Nqezinye izinsoko ☐

4.4) Uma ungakwenzi, nika isi(zi)zathu so(zo)kungakwnzi

_____

5) Iziphi kulezi zikhali onazo kumtholampilo wakho ukwenza lomboniso?

Into yendaba	Yebo	Cha
Indishi yokugeza izandla.		
Insipho.		
Amathawula wephepha okomisa izandla.		
Inkomishi noma ingilazi yokukala ebonisa ubungakanani.		
Indebe yokukala ubisi.		
Igedlela (noma nayiphi enye indlela) lokubilisa amanzi.		
Umese wokucabaza ubisi kwindebe.		
Ukhezo lokugoqoza ubisi.		

ISIGABA E

Phawula ngo "X" ebhokisini elifanele. (Khetha impendulo eyondwa)

1) Uma umama esekhethe ukuncelisa ingane yakhe, iziphi kulezinto ezilandelayo ezingenza ukuthi ezingandisa amathuba wokuthi adlulisele isandulela ngculazi enganeni yakhe futhi okufuneka azazisiwe?

Usanda ukusuleleka ngesandulela ngculaza	
Usuleleke nge-STD (isifo sokwecansi)	
Ubude besikhathi sokuncelisa	
Izindlela ezixubene zokondla	
Izinkinga ngebele njengezingono eziqhibukile/dabukile noma ukudumba kwebele	
Izinkinga emlonyeni wengane	
Konke okubalwe ngaphezulu	
Akukho nokukodwa kokubalwe ngaphezulu	

2) Kumele aqale nini umama ukuncelisa

Emizuzwini engamashumi amathathu emva kokuthi ezele	
Ehoreni lokuqala emva kokuthi ezele	
Akubalulekanga ukuthi uqala nini ukuncelisa	

3) Ukubamba kahle ingane ebeleni kumele uyibambe:

Ikhanda nomzimba ziqonde	
Ibheke ebeleni likamama, ikhanda libhekene nengono	
Umzimba wayo usondele emzimbeni kamama	
Umzimba wonke usekiwe, hayi intamo namahlambe kuphela	
Konke okubalwe ngaphezulu	
Akukho nokukodwa kokubalwe ngaphezulu	
Noma ngayiphi indlela umama azizwa egculiseke ngayo	

4) Ukudibanisa ingane nebele okulungile kubonakala ngoku:

Indebe yangezansi igobela ngaphandle	
Isilevu sengane sithinte ibele	
Umlomo wengane umboze ubukhulu be-areola, hayi ingono kuphela	
Konke okubalwe ngaphezulu	
Akukho nokukodwa kokubalwe ngaphezulu	

5) Umama kumele akhuthazwe ukuncelisa:

Njalo emva kwamahora amathathu	
Uma ecabanga ukuthi ingane ilambile	
Uma ingane ifuna	
Konke okubalwe ngaphezulu	
Akukho nokukodwa kokubalwe ngaphezulu	

6) Uma umama esenze ukhetho lokuthi uzoncelisa noma uzokondla ngobisi lwethini, ingaba nakunoma yiziphi izimo kumele ukuthi akhuthazwe ukuxuba isondlo, okuthi, afake noma yikuphi ukudla noma okokuphuza ukongeza ukudla kwengane:

Yebo	
Cha	

7) Uma umama enokudumba kwebele isiluleko sakho mayelana nokuncelisa yikuthi:

Aqhubeke nokuncelisa ngebele elingasulelekanga angalinazi lonke ubisi lwebele elisulelekile	
Makayeke ukuncelisa aqale ubisi lwethini	

8) Imvamisa idinga ubisi lwethini olungakanani ngosuku

50ml/kg ngosuku	
100ml/kg ngosuku	
150ml/kg ngosuku	
200ml/kg ngosuku	
Akukho nokukodwa kokubalwe ngaphezulu	

9) Ungasihlukanisa kangakhi isondlo sethini ngosuku?

2 - 4	
4 - 6	
6 - 8	
8 - 10	
Akukho nokukodwa kokubalwe ngaphezulu	

10) Yisho izindlela eziyisikhombisa zokulungisa ukudla kwethini kwengane:

APPENDIX J

QUESTIONNAIRE FOR THE MOTHERS

Dear Mother

Prevention of Mother-to- Child Transmission Programme: How "informed" is the literate mother's decision regarding infant feeding options in the Gert Sibande District, Mpumalanga , South Africa?

I am a post-graduate student at the University of Stellenbosch. I am busy with my research project for Masters in Nutrition and will appreciate it if you would be so kind as to participate in the study. The study has two aims. Firstly to determine the impact of the knowledge, personal preference and attitude of health workers, as well as the resources available to them, on the mother's ability to make an informed decision about infant feeding options and secondly to determine the mother's experience regarding infant feeeding options in both the counselling session with the health care worker and in the community.

I have compiled a research questionnaire, which I would be grateful if you could fill in honestly. Please be honest and do not try to give what you think is the right answer but how you yourself experience it in reality.

I sincerely appreciate you help.

Thank you

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Please mark the appropriate box with an "X" Subject number: ☐

1) How old is your youngest child?

0-1 month	☐
1-2 months	☐
2-3 months	☐
3-4 months	☐

2) Are you breast-feeding or formula-feeding your infant?

Breast-feeding	☐
Formula-feeding	☐

3) Were you influenced/pressured by any family member to practise the opposite infant feeding option to that which you have chosen? For example, if you chose to formula-feed, did they want you to rather breast-feed or visa versa?

Yes	☐
No	☐

4) If you formula-feed your infant, will the community (especially someone in your family) suspect that you are HIV-infected?

Yes	☐
No	☐

5) Which of the following statements describes your sitiuation at home the best: (You can only choose one of the options)

I always breast-feed	☐
I always formula-feed	☐
In front of my family I breast-feed my infant, but when I am alone I formula-feed feed my infant	☐

6) Which feeding option is better accepted in your community?

Breast-feeding	
Formula-feeding	

7) When you chose to be on the PMTCT Programme, the health care worker counselled you on the different feeding options available for your infant. Which of the following statements describe your counselling session with the health care worker the best: (you must choose one option at 7.1. and one option at 7.2.)

7.1)

(i) The health care worker explained all the advantages and disadvantages of both breast-feeding and formula-feeding and left the decision to me. ☐

(ii) The health care worker explained that I should breast-feed my infant. ☐

(ii) The health care worker explained that I should formula-feed my infant. ☐

7.2)

(i) I chose the feeding option that the health care worker told me is better. ☐

(ii) I already decided the feeding option before the counselling session, based on what my family wants me to do. ☐

(iii) I listened carefully to what the health care worker told me and then made my own decision based on information provided to me. ☐

If you are BREAST-FEEDING only answer questions 8.1 - 8.5
If you are FORMULA-FEEDING only answer questions 9.1 - 9.13
If you are BOTH breast-feeding and formula-feeding answer questions 8.1. - 9.13

8.1) How long after delivery did you start breast-feeding?

Within half an hour	
Within a few hours	
Within days	

8.2) Did you have any help from the health care worker to position and attach your infant to your breast?

Yes ☐
No ☐

8.3) Have you experienced any difficulties with breast-feeding, such as:

	Yes	No
Not enough milk		
Infant refuses the breast		
Mastitis/sore nipples		

8.4) Did you stop breast-feeding because of any of the above-mentioned difficulties?

Yes ☐
No ☐

8.5) If you went to the clinic for help what advice did the health care worker give you to resolve your problem with breast-feeding?

_____

_____

_____

_____

_____

_____

9.1) When you chose to formula-feed your infant did the health care worker explain to you how much formula your infant would need per day?

Yes ☐
No ☐

9.2) If yes, how much?

_____

9.3) Did the health care worker explain to you how to prepare the formula?

Yes ☐
No ☐

9.4) Did the health care worker demonstrate the preparation of the feed to you?

Yes ☐
No ☐

9.5) Did the health care worker let you prepare the feed yourself in the counselling session?

Yes ☐
No ☐

9.6) Explain exactly how you prepare the formula at home.

_____
_____
_____
_____
_____
_____
_____

9.7) Do you always have the following available to prepare the formula?

	Yes	No
Clean water		
Fuel (gas, paraffin, wood or electricity)		

9.8) Which of the following statements describes your situation the best?

I have lots of time and prepare each feed for my infant separately ☐

Time is of the essence and therefore I prepare all the feeds for the day at one time ☐

9.9) Where do you store the prepared feed?

In the fridge	
On the table	

9.10) How much time goes by before you use the prepared feed?

0-30 minutes	
30 minutes - 1 hour	
1 hour - 2 hours	
More than two hours	

9.11) The PMTCT Programme provides you with free formula for the first 6 months of your infant's life. Is this the reason you chose to formula-feed instead of breast-feeding ?

Yes	
No	

9.12) Are you able to fetch your supply of free milk regularly or do you sometimes run out of milk supply?

There is always formula available	
There is times when no formula is available	

9.13) When no formula milk is available, what do you feed your infant? (Please provide quantities)

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

IPHEPHA LEMIBUZO LOMAMA NGOHLELO LWE PMTCT

Mama obekekile

Uhlelo lokuvimbela ukutheleleka okusuka kumama kuya enganeni:
Saziswe kahle kangakanani isinqumo sikamama ngendaba yokukhetha indlela yokondla ingane eGert Sibande District, eMpumalanga, eMzantsi Afrika?

Ngingumfundi wezifundo ezinomsila eNyuvesi yase Stellenbosch. Ngimatasa ngocwaningo lwezifundo zami ze Masters of Nutrition, futhi ngingajabula uma ungaba nomusa uhlanganyele kulolu phando. Uphando lunenhloso ezimbili. Okokuqala ukuthola ngomthelela wolwazi, okuthandwa ngumuntu nesimo sika sompilo nengcebo abayitholayo, ngokukhona kukamama ukwenza isinqumo esaziswe kahle ngezindlela zokondla ingane, okwesibili ukuthola ngolwazi lukamama mayela nezindlela zokondla ingane eseshinini yoluleko nosompilo nasemphakathini.

Ngihlanganise iphepha lemibuzo locwaningo engingajabula uma ungaligcwalisa ngokuthembeka. Ngicela uthembeke futhi ungazami ukuphendula ocabanga ukuthi kulungile, kodwa uphendule ngolwazi lwakho lwasekuhlaleni.

Ngiyalithakazelela uncedo lwakho

Ngiyabonga

Annemarie Davis RD (SA)
Piet Retief Hospital
Piet Retief
Mpumalanga
Tel: 017 826 2222

Phawula ngo "X" esikhewini osikhethayo

Inombolo yesiguli ☐

1) Uneminyaka emingaki umntwana wakho omncane?

inyanga engu 0-1 ☐
izinyanga ezingu 1-2 ☐
izinyanga ezingu 2-3 ☐
izinyanga ezingu 3-4 ☐

2) Uyancelisa noma wondla ngobisi lwethini?

Ngiyancelisa ☐
Ngondla ngobisi lwethini ☐

3) Ngabe wawucindezelwe amalunga omndeni ukuba ukhethe indlela eyahlukile yokondla umntwana kulena eyayikhethwe nguwe? Isibonelo, uma wawukhethe ubisi lwethini ngabe bafuna ukuthi uncelise noma uma wafuna ukuncelisa bakukhethisa ubisi lwethini?

Yebo ☐
Cha ☐

4) Uma wodla umntwana wakho ngobisi lwethini ingabe umphakathi (ikakhulu umuntu osemndenini) uzosola ukuthi unesandulela ngculazi

Yebo ☐
Cha ☐

5) Iyiphi incazelo kulezi ezilandelayo echaza isimo sakho ekhaya: (Ungakhetha kube kunye kuphela)

Ngimuncelisa ibele njalo umntanami ☐

Ngimudlisa ubisi lwethini njalo umntanami ☐

Phambi komndeni wami ngimuncelisa ibele umntanami, kanti uma ngingedwa ngimudlisa ubisi lwethini ☐

6) Iyiphi indlela yokondla evumelekile emphakathinin wakho ?

Ukuncelisa ☐
Ubisi lwethini ☐

7) Uma wawukhetha ukuba kuhlelo lwe-PMTCT owezempilo wakululeka ngezindlela ezihlukile ezitholakalayo zokondla umntwana wakho. Yisiphi isitatimende kulezi ezilandelayo esichaza isesheni evelele yoluleko lwakho ngowezempilo:
(Kumele ukhethe okukodwa ku 7.1. nokukodwa ku 7.2.)

7.1)

(i) Owezempilo wachaza bonke ububi nobuhle bokuncelisa kanye nobisi lwethini washiya kimi ukuthi ngenze isinqumo . ☐

(ii) Owezempilo wangichazela ukuthi kumele ngimuncelise umntwana wami ☐

(iii) Owezempilo wangichazela ukuthi kumele ngondle umntwana wami ngobisi lwethini ☐

7.2)

(i) Ngakhetha indlela yokondla owathi owezempilo ingcono ☐

(ii) Bese ngivele ngiyazi indlela yokondla ngaphambi kweseshini yoluleko nowezempilo kusukela kulokho umndeni wami ofuna ngikwenzile ☐

(iii) Ngakulalelisisa okwashiwo owezempilo ngase ngithatha esami isinqumo,ngokolwazi engase ngilitholile. ☐

Uma uncelisa phendula lemibuzo 8.1 - 8.5
Uma usebenzisa ubisi lwesikotela phendula imibuzo 9.1 - 9.13
Uma usebenzisa ibhodlela kanye nebele phendula imibuzo 8.1 - 9.13

8.1) Waqala nini ukuncelisa emva kokuthi uzele?

Lingakapheli ihora ☐
Emva kwamahora ambalwa ☐
Ezinsukwini ☐

8.2) Waluthola yini usizo kowezempilo ngendlela yokumbeka kanye nendlela omhlanganisa ngayo umntwana nebele?

Yebo
Cha

8.3) Zikhona yini izinkinga ohlangabezane nazo uma uncelisa, ezinjengalezi:

	Yebo	Cha
Ubisi olunganele		
Umntwana anglifuni ibele		
Ukuvuvuka kwebele noma izingono ezibuhlungu		

8.4) Ngabe zakuyekisa ukuncelisa yini lezinkinga ezibalwe ngaphezulu?

Yebo
Cha

8.5) Uma waya emtholampilo uyofuna usizo,ngabe usompilo wakunika ziphi izeluleko zokuxazulula inkinga yakho yokuncelisa?

9.1) Ngesikhahi ukhetha ubisi lwethini ngabe owezempilo wakuchazela yini ukuthi Ingane izodinga ubisi olungakanani ngosuku?

Yebo
Cha

9.2) Uma uthe yebo, olungakanani?

9.3) Ngabe owezempilo wakuchazela yini ukuthi kumele ulwenze kanjani ubisi lomntwana?

Yebo ☐
Cha ☐

9.4) Ngabe owezempilo wakutshengisa yini indlela yokwenza isondlo?

Yebo ☐
Cha ☐

9.5) Ngabe owezempilo wakunika yini ithuba lokuthi nawe usenze isondlo sengane ngenkathi ngenkathi yeseshini yoluleko?

Yebo ☐
Cha ☐

9.6) Chaza kahle ukuthi ulwenza kanjani ubisi ekhaya?

_____

_____

_____

_____

_____

_____

_____

9.7) Ingaba uhlale unakho njalo yini lokhu okulandelayo uma ulungisa ubisi lwomntwana?

	Yebo	Cha
Amanzi ahlanzekile		
Amafuthha (egesi, upharafini, izinkuni nomaUgesi)		

9.8) Yiziphi izitatimende kulezi ezilandelayo ezichaza isimo sakho kahle?

Nginesikhathi esanele futhi ngilungisa isondlo sengane yami ngokwahlukene ☐

Isikhathi sibalulekile ngakho ngikulungisa sonke isondlo sosuku ngesikhathi esisodwa. ☐

9.9) Ukubeka kuphi isondlo sengane esesilungisiwe?

Efrijini ☐
Etafuleni ☐

9.10) Undlilisa isikhathi esingakanani ngaphambi kokuthi usebenzise isondlo esesilungisiwe?

Emizuzwini ephakathi kuka 0-30 ☐
Emizuzwini engama-30 ukuya ehoreni ☐
Ehoreni ukuya emahoherini amabilii ☐
Ngaphezu kwamahora amabili ☐

9.11) Uhlelo lwe PMTCT likunika ubisi lwethini lwamahhala izinyanga eziyisithupha zokuqala. Ngabe lesi isona sizathu esenze ukuthi ukhethe ubisi lwethinni kunokuncelisa?

Yebo ☐
Cha ☐

9.12) Ngabe uyakwazi ukuhlala ulilanda njalo ubisi noma luyaye luphele ngezinye iznkathi?

Luhlale lukhona ubisi lwethini ☐
Kuyenzeka lungabibikho ubisi ☐

9.13) Uma lungekho noma luphelile ubisi lontwana uyaye umuphe ini?

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Vraelys vir moeders wat deelneem aan die PMTCT-program

Geagte Moeder

Program vir die voorkoming van moeder-tot-kind-oordrag (VMTKO):
Hoe "ingelig" is die geletterde moeder se besluit rakende voedingsopsies vir babas in die Gert Sibande Distrik, Mpumalanga , Suid-Afrika?

Ek is 'n nagraadse student aan die universiteit van Stellenbosch. Ek is besig met my navorsingsprojek vir 'n meestersgraad in Voeding en sal dit waardeer as u so vriendelik sal wees om deel te neem aan die studie. Die projek het twee doelwitte: Eerstens om vas te stel wat die impak is van kennis, persoonlike voorkeur en ingesteldheid van gesondheidswerkers asook die bronne waaroor hulle beskik op die moeder se vermoë om 'n ingeligte besluit te neem oor voedingsopsies vir babas, en tweedensom vas te stel wat die moeder se ervaring is omtrent sodanige voedingsopsies in beide die beradingsessie met die gesondheidswerker en in die gemeenskap.

Ek sal dankbaar wees as u die navorsingsvraelys wat ek saamgestel het eerlik sal voltooi. Ek wil vasstel wat u sienswyse omtrent die program is, daarom versoek ek u om die vrae eerlik te beantwoord en nie die antwoord wat u as "reg" beskou, te voorsien nie. Baseer dus u antwoord op hoe u dit werklik beleef.

Ek waardeer u hulp opreg.

Baie dankie.

Annemarie Davis RD (SA)
Piet Retief Hospitaal
Piet Retief
Mpumalanga
Tel: 017 826 2222

Merk asseblief die opsie waarmee u die meeste saamstem met 'n "X"

Onderwerp nommer

1) Hoe oud is u jongste kind?

0-1 maand
1-2 maande
2-3 maande
3-4 maande

2) Borsvoed u u baba of gee u u baba formulevoeding?

Borsvoeding
Formulevoeding

3) Is u beïnvloed / onder druk geplaas deur enige gesinslid om die teenoorgestelde baba-voedingsopsie te gebruik as wat u gekies het? Byvoorbeeld, as u formulevoeding gekies het, wou iemand hê dat u eerder moet borsvoed, of andersom?

Ja
Nee

4) Sal die gemeenskap (veral iemand in u gesin) dink u is HIV-positief as u u baba formulevoeding gee?

Ja
Nee

5) Watter een van die volgende stellings beskryf u situasie tuis die beste? (U kan net een opsie kies.)

Ek borsvoed altyd my baba

Ek formulevoed altyd my baba

Voor my gesin borsvoed ek my baba, maar as ek alleen is gee ek formulevoeding .

6) Watter voedingsopsie word die beste aanvaar in u gemeenskap?

Borsvoeding ☐
Formulevoeding ☐

7) Toe u besluit het om op die VMTKO-program te wees het die gesondheidswerker u beraad oor die verskillende voedingsopsies beskikbaar vir u baba? Watter van die volgende stellings beskryf u beradingsessie met die gesondheidswerker die beste? (u moet een kies by 7.1.en een by 7.2.)

7.1)

(i) Die gesondheidswerker het al die voordele en nadele van beide borsvoeding en formulevoeding verduidelik en toe die keuse aan my oorgelaat. ☐

(ii) Die gesondheidswerker het verduidelik dat ek my kind moet borsvoed. ☐

(iii) Die gesondheidswerker het verduidelik dat ek my kind moet formulevoed ☐

7.2)

(i) Ek het die voedingsopsie gekies wat die gesondheidswerker gesê het is beter. ☐

(ii) Ek het reeds voor die berading besluit watter voedingsopsie om te gebruik gebaseer op wat my gesin wil hê ek moet doen. ☐

(iii) Ek het aandagtig geluister wat die gesondheidswerker sê en toe my eie besluit geneem op grond van die inligting wat ek gekry het. ☐

Indien u BORSVOED, antwoord slegs vrae 8.1 - 8.5.
Indien u FORMULEVOEDING gebruik, beantwoord slegs vrae 9.1 - 9.13.
Indien u BEIDE borsvoed en formulevoeding gebruik, beantwoord 8.1 - 9.13.

8.1) Hoe lank na die geboorte het u begin met borsvoeding?

Binne 'n halfuur ☐
Binne 'n paar uur ☐
Binne dae ☐

8.2) Het u enige hulp van die gesondheidswerker gekry om die baba korrek te plaas en aan u bors te heg?

Ja ☐
Nee ☐

8.3) Het u enige probleme met borsvoeding ondervind soos:

	Ja	Nee
Nie genoeg melk nie		
Baba weier om die bors te vat		
Mastitis/seer tepels?		

8.4) Het u opgehou borsvoed as gevolg van enige van bogenoemde probleme?

Ja ☐
Nee ☐

8.5) Indien u kliniek toe gegaan het vir hulp, watter raad het die gesondheidswerker U gegee om u probleem met borsvoeding op te los?

_____
_____
_____
_____
_____
_____

9.1) Toe u gekies het om u baba te formulevoed, het die gesondheidswerker aan u verduidelik hoeveel formule u baba per dag nodig sal hê ?

Ja ☐
Nee ☐

9.2) Indien wel, hoeveel?

_____

9.3) Het die gesondheidswerker verduidelik hoe u die formule moet voorberei?

Ja ☐
Nee ☐

9.4) Het die gesondheidswerker aan u gedemonstreer hoe om die formule voor te berei?

Ja ☐
Nee ☐

9.5) Het die gesondheidswerker u toegelaat om die formule self voor te berei gedurende die opleidingsessie ?

Ja ☐
Nee ☐

9.6) Verduidelik presies hoe u die formule tuis voorberei.

_____
_____
_____
_____
_____

9.7) Het u altyd die volgende items beskikbaar om die formule voor te berei?

	Ja	Nee
Skoon water		
Brandstof (gas, parafien, hout of elektrisiteit)		

9.8) Watter van die volgende stellings beskryf u situasie die beste?

Ek het baie tyd en berei elke voeding van my baba afsonderlik voor. ☐

Tyd is kosbaar, daarom berei ek al die voedings vir die dag op dieselfde tyd voor. ☐

9.9) Waar bêre u die voorbereide voeding?

In die yskas	
Op die tafel	

9.10) Hoe lank nadat u die voeding voorberei het, voer u u baba?

0-30 minute	
30 minute - 1 uur	
1 uur - 2 uur	
Meer as twee uur.	

9.11) Die VMTKO-program voorsien gratis formule aan u vir die eerste ses maande van u baba se lewe. Is dit die rede waarom u formulevoeding- eerder as borsvoeding gekies het?

Ja	
Nee	

9.12) Is u in staat om u voorraad gratis formule gereeld te gaan haal of raak u voorraad melk soms op voor u nog gaan haal?

Daar is altyd formule beskikbaar	
Soms is daar nie formule beskikbaar nie	

9.13) Wanneer daar geen formule beskikbaar is nie, wat voer u u baba? (Dui asseblief hoeveelhede aan)

_____

_____

_____

_____

_____

APPENDIX K

PARTICIPANT INFORMATION RECORD

SUBJECT INFORMATION SHEET **CONFIDENTIAL**

Subject no: _____

Sex: M / F

Initials: _____ Surname: _____

Date of birth: _____ (day) / _____ (month) / 19_____

Physical address: _____

_____

_____

_____Code_____

Contact no: Work: _____

Home: _____

Cell: _____

Fax: _____

Race: Black / White / Coloured / Indian

Home Language: _____

DEELNEMER INLIGTINGSREKORD

VERTROULIK

Onderwerp nr: _____

Geslag: M / V

Voorletters: _____ Van: _____

Geboortedatum: _____ (dag) / _____ (maand) / 19_____

Fisiese adres: _____

_____

_____

_____Kode_____

Kontaknr: Werk: _____

Huis: _____

Sel: _____

Fax: _____

Etniese groep: Swart / Wit / Kleurling / Indiër

Huistaal: _____

UKUGCINWA KOLWAZI NGESIGULI / UMSEBENZI WEZEMPILO

INFIHLO

Inombolo yesiguli: _____

Ubulili: Owesilisa / Owesimame

Izinhlamvu zokugala zamagama akho: _____ Isibongo: _____

Usuku Owazalwangalo: _____ / _____ inyanga / 19_____ unyaka

Inombolo yendlu nomgwaqo, nedolobha lapho uhlala khona:

_____

_____

_____

_____Ikhodi_____

Inombo yocingo: Emsenzini: _____

Ekhaya: _____

Umakhalekhukhwini: _____

Isikhahlamezi: _____

Ubuzwe: Onsundu / Omhlophe / Ikhaladi / Indiya

Ulimi olukhulumayo: _____

APPENDIX L

CONSENT FORM

Consent form **Subject no:** _____

INFORMATION AND INFORMED CONSENT DOCUMENT

TITLE OF THE RESEARCH PROJECT: Prevention of Mother-to-Child Transmission Programme: How "informed" is the literate mother's decision regarding infant feeding options in the Gert Sibande District, Mpumalanga, South Africa?

REFERENCE NUMBER: N04/03/050

PRINCIPAL INVESTIGATOR: Mrs. A. Davis RD (SA)

ADDRESS: P. O. Box 990, Piet Retief 2380

Tel: 017 826 2222 x 2214

DECLARATION BY OR ON BEHALF OF THE PATIENT/*PARTICIPANT:

I, THE UNDERSIGNED,

..... (name)

[ID No: .....] the patient/*participant or* in my capacity as .....

of the patient/*participant [ID No:.....] of .....

..... (address).

A. HEREBY CONFIRM AS FOLLOWS:

1. I/*the patient/*participant was invited to participate in the above-mentioned research project which is being undertaken by the Department of *Human Nutrition*, Faculty of Health Sciences, Stellenbosch University.
2. The following aspects have been explained to me/* the patient/* the participant:

2.1. **AIM:** To determine the effectiveness of the prevention of mother-to-child transmission (PMTCT) programme of the SA government, with specific reference to the education given on feeding options.

2.2. **Procedures:** All health workers in the Gert Sibande District, Mpumalanga, South

Africa, who have undergone the 5 day PMTCT training programme and are involved in PMTCT sites will be asked to complete a questionnaire. Equally all mothers who have been given education on infant feeding options at these sites will be asked to complete a separate questionnaire.

2.3. **Risks:** The study involves no risks to either health care workers or patients (mothers).

2.4. **Possible benefits:** the benefits to the health care workers and patients will not be individual, but universal since the information gathered will be used to improve the ability of the health care workers to provide an effective service and to improve the support that patients will receive from the programme.

2.5. **Confidentiality:** The information collected in this study will be treated as confidential and it will only be included in a thesis and a journal publication. At no point in time and for no purpose whatever will the identity of any participant or patient be disclosed.

2.6. **Access to the findings:** The project mainly aims to enable health care workers in providing an effective service to the patient in order to allow the patient to make an informed decision about infant feeding options, and therefore the findings and recommendation of the study will be mainly made available to the Mpumalanga Department of Health, in a written form.

2.7. **Voluntary participation/refusal/discontinuation:** You, the participant or patient, are participating voluntarily in this study. You or your supervisor/*guardian have the right to refuse to participate in the study and you also have the right to discontinue your participation at any time and this refusal to participate will not prejudice your future treatment at this institution.

3. The information above was explained to me /*the patient/* the participant by ..... (name of relevant person) in Afrikaans/*English/*Zulu/*Other ..... and I am/*the patient/* the participant is in command of this language/*it was satisfactorily translated to me/*him/*her by ..... (name of translator). I/*The patient/* The participant was given the opportunity to ask questions and all questions were answered satisfactorily.
4. No pressure was exerted on me/*the patient/* the participant to consent to participation and I/*the patient/*the participant understand(s) that I/*the patient/*the participant may withdraw at any stage without any penalization.
5. Participation in this study will not result in any additional costs to myself/*the patient/*the participant.

B. HEREBY CONSENT VOLUNTARILY TO PARTICIPATE IN THE ABOVE-MENTIONED PROJECT/*THAT THE PATIENT/*POTENTIAL PARTICIPANT MAY PARTICIPATE IN THE ABOVE-MENTIONED STUDY

Signed/confirmed at ..... (place) on ..... 200... (date)

....
Signature or right thumb print of patient/ representative of the patient/participant

Signature of witness

STATEMENT BY OR ON BEHALF OF INVESTIGATOR(S):

I, ..., declare that:

- I explained the information given in this document to .....

(name of the patient/*participant) and/*or his/*her representative .....

(name of representative);

- he/*she was encouraged and given ample time to ask me any questions;
- this conversation was conducted in Afrikaans/*English/*Zulu/*Other ..... and no translator was used/*this conversation was translated into ..... (language) by ..... (name).

Signed at ..... (place) on ..... 200... (date)

....
Signature of investigator /*investigator's representative

Signature of witness

DECLARATION BY TRANSLATOR

I, ... (name), confirm that I:

- translated the contents of this document from English into ..... (indicate the relevant language) to the patient/*the patient's representative/*the participant;
- explained the contents of this document to the patient/*patient's representative/*the participant;
- also translated the questions posed by ..... (name), as well as the answers given by the investigator/*the investigator's representative; and

conveyed a factually correct version of what was related to me.

Signed at ..... (place) on ..... 200... (date)

....

Signature translator Signature of witness

IMPORTANT MESSAGE TO PATIENT/*REPRESENTATIVE OF PATIENT/*PARTICIPANT:

Dear patient/*representative of the patient/*participant,

Thank you for your/*the patient's participation in this study. Should at any time during the study, an emergency arise as a result of the research or you require any further information with regard to the study, kindly contact Mrs A. Davis at telephone number 017 826 2222 x 2214.

Toestemmingsvorm **Onderwerp nr: _____**

INLIGTING EN VERKLARING RAKENDE TOESTEMMING

TITEL VAN DIE NAVORSINGSPROJEK: Program vir die voorkoming van moeder-tot-kind-oordrag : hoe "ingelig" is die geletterde moeder se besluit rakende voedingsopsies vir babas in die Gert Sibande Distrik, Mpumalanga, Suid-Afrika?

VERWYSINGSNOMMER: N04/03/050

HOOFNAVORSER: Mev. A. Davis RD (SA)

ADRES: Posbus 990, Piet Retief 2380

Tel: 017 826 2222 x 2214

VERKLARING DEUR OF NAMENS DIE PASIëNT/*DEELNEMER:

EK, DIE ONDERGETEKENDE,

..... (naam)

[ID NR: .....] pasiënt/*deelnemer* of in my hoedanigheid as .....

van die pasiënt /*deelnemer [ID No:.....] woonagtig te

.....

..... (adres).

A. BEVESTIG HIERMEE DIE VOLGENDE:

6. Ek/*die pasiënt/*deelnemer is uitgenooi om deel te neem aan die bogenoemde navorsingsprojek wat deur die Departement Menslike Voeding van die Fakulteit Gesondheidswetenskappe aan die Universiteit van Stellenbosch onderneem word.
7. Die volgende aspekte is aan my/* die pasiënt/* die deelnemer verduidelik:

7.1. **Doelwit:** Om die effektiwiteit van die SA regering se program vir die voorkoming van moeder-tot-kind-oordrag (PMTCT) te bepaal, met spesifieke verwysing na die opleiding wat gegee word rakende voedingsopsies.

7.2. **Prosedures:** Alle gesondheidswerkers in die Gert Sibande-distrik , Mpumalanga, Suid-Afrika wat die 5-dag PMTCT-opleidingsprogram ondergaan het, en wat by PMTCT- sentra betrokke is, sal versoek word om 'n vraelys te voltooi. So ook sal alle

moeders wat opleiding oor babavoeding by hierdie sentra ontvang het, versoek word om 'n afsonderlike vraelys te voltooi.

7.3. **Risiko's:** Die studie hou geen risiko vir die gesondheidswerkers of pasiënte (moeders) in nie.

7.4. **Moontlike voordele:** Hoewel daar geen individuele voordele vir die gesondheidswerkers en pasiënte is nie, is die studie tot die algemene voordeel, aangesien die verkreë inligting aangewend sal word om gesondheidswerkers in staat te stel om 'n effektiewe diens daar te stel en om die pasiëntsteun wat die program bied, te verbeter.

7.5. **Vertroulikheid:** Die inligting wat met hierdie studie ingesamel word, sal as vertroulik hanteer word en sal slegs in 'n proefskrif en tydskrifartikel opgeneem word. Onder geen omstandighede sal die identiteit van enige deelnemer of pasiënt bekendgemaak word nie.

7.6. **Toegang tot bevindings:** Aangesien die projek hoofsaaklik daarop gemik is om gesondheidswerkers in staat te stel om 'n effektiewe diens aan die pasiënt te lewer ten einde die pasiënt in staat te stel om 'n ingeligte besluit oor kindervoedingsopsies te neem, sal die bevindings en aanbevelings van die studie hoofsaaklik skriftelik aan die Departement van Gesondheid van Mpumalanga bekendgemaak word.

7.7. **Vrywillige deelname/weiering/opskorting:** U, die deelnemer of pasiënt, neem vrywillig aan die studie deel. U, u toesighouer/*voog het die reg om te weier om aan die studie deel te neem en u het ook die reg om u deelname aan die studie te enige tyd op te skort, en sodanige weiering sal nie u toekomstige behandeling by hierdie instelling benadeel nie.

8. Die bostaande inligting is aan my/* die pasiënt /*die deelnemer deur .... (naam van relevante persoon) in Afrikaans/* Engels/* Zulu/*Ander ..... verduidelik en ek verklaar dat ek/* die pasiënt/* die deelnemer hierdie taal verstaan /* dat dit bevredigend aan my/* hom/* haar verduidelik is deur .... (naam van vertaler). Ek/* die pasiënt/* deelnemer is die geleentheid gegee om vrae te vrae en alle vrae is tot my bevrediging beantwoord.

9. Geen druk is op my/* die pasiënt/* deelnemer uitgeoefen om deel te neem nie en ek/*

die pasiënt/* deelnemer begryp dat ek/* die pasiënt/* deelnemer op enige stadium mag onttrek sonder enige benadeling.

10. Deelname aan hierdie studie sal nie enige addisionele koste vir my/* die pasiënt/* deelnemer meebring nie.

B. STEM HIERMEE VRYWILLIG IN OM AAN DIE BOGENOEMDE PROJEK DEEL TE NEEM/* DAT DIE PASIENT/* DEELNEMER AAN DIE BOGENOEMDE STUDIE MAG DEELNEEM.

Geteken/bevestig te ..... (plek) op ..... 200... (datum)

....
Handtekening of regterduimafdruk van pasiënt/ Verteenwoordiger van die pasiënt/deelnemer

Handtekening van getuie

VERKLARING DEUR OF NAMENS ONDERSOEKBEAMPTE(S)

Ek....., verklaar dat:

- Ek die inligting in hierdie dokument verduidelik het aan .....

  (naam van die pasiënt/*deelnemer en/*or sy/*haar verteenwoordiger .....

  (naam van verteenwoordiger);
- hy/*sy aangemoedig is, en genoeg tyd gegun is om my enige vrae te vra;
- hierdie gesprek in Afrikaans/*Engels/*Zulu/*Ander .....gevoer is en geen vertaler gebruik is nie/* die gesprek vertaal is in ..... (taal) deur .....(naam).

Geteken te ..... (plek) op ..... 200... (datum)

....
Handtekening van ondersoekbeampte /* verteenwoordiger

Handtekening van getuie

VERKLARING DEUR VERTALER

Ek, ... (naam), bevestig dat ek:

- die inhoud van hierdie dokument uit Engels na ..... vertaal het (dui die relevante taal aan) vir die pasient/* die pasiënt se verteenwoordiger /* die deelnemer;
- die inhoud daarvan verduidelik het aan die pasiënt/* pasiënt se verteenwoordiger/* deelnemer;
- ook die vrae gestel deur ..... (naam), asook die antwoorde verskaf deur die ondersoekbeampte/* ondersoekbeampte se verteenwoordiger vertaal het; en
- 'n feitlik korrekte weergawe oorgedra het van wat aan my vertel is.

Geteken te ..... (plek) op ..... 200... (datum)

....
Handtekening vertaler Handtekening van getuie

BELANGRIKE BOODSKAP AAN DIE PASIëNT/* VERTEENWOORDIGER VAN DIE PASIëNT/* DEELNEMER:

Geagte pasiënt/* verteenwoordiger/* deelnemer

Dankie vir u/* die pasiënt se deelname aan die studie. Sou daar te enige tyd gedurende die studie 'n noodgeval ontstaan as gevolg van die navorsing, of indien u enige verdere inligting in verband met die studie verlang, moet u asseblief mev. A. Davis skakel by telefoonnommer 017 826 2222 x 2214.

Ifomu lemvume **Inombolo yesiguli: _____**

UMQULU WOLWAZI NOKWAZISA KAHLE NGEMVUME

IGAMA LENHLOBO YOCWANINGO: Uhlelo lokuvimbela ukusuleleka okusuka kumama kuya enganeni : saziswe kahle kangakanani isinqumo sikamama ngendaba yokukhetha indlela

yokondla ingane eGert Sibande District, eMpumalanga, eSouth Africa?

INOMBOLO YEREFENSI: N04/03/050

UMSESHI/UMHLOLI OYINTLOKO/OPHAMBILI: Mrs A. Davis RD(SA)

IKHELI: P.O. Box 990, Piet Retief, 2380

Tel: 017 826 2222 x 2214

ISIMEMEZELO NGOMAMA NGENXA YESIGULI/*UMHLANGANYELI:

MINA, OSAYINE NGEZANSI,

.....(igama)

[Inombolo yesazisi: .....] isiguli/*umhlanganyeli noma *ngokwesikhundla saminjengo .....

wesiguli/*womhlanganyeli [inombolo yesazisi: .....] wase .....(ikheli).

A. NGALOKHU NGIVUMA NGOKULANDELAYO:

1. Mina/*isiguli/*umhlanganyeli ngimenyiwe ukuhlanganyela kulolu hlobo locwaningo olukhannkanywe ngaphezulu olwenziwa ngumnyango wezokondliwa komzimba wabantu, kwisigaba semfundo yesayensi yezempilo kwinyuvesi yase Stellenbosch.
2. Lezinhlangothi ezilandelayo zichaziwe kimina/*kusiguli/*kumhlanganyeli:

2.1. **INHLOSO:** Ukuqonda ngempumelelo yohlelo lokuvikela ukutheleleka okusuka kumama kuya enganeni likahulumeni wase South Africa, okuqondene nokufundiuswa okutholakele ngokukhetha indlela yokondla.

2.2.INDLELA YENQUBO: Bonke osompilo kwi Gert Sibonde District, eMpimalanga eSouth Africa abenze uqeqesho lwensuku ezinhlanu lwe PMTCT futhi lapho labosompilo bangenelela khona kwizindawo ze PMTCT bazakucelalwa ukuthi bagcwalise iphepha lemibuzo. Ngoukulinganayo abomama abanikezwe izifundo

ngokukhetha indlela yokondla ingane kulezi zindawo bazocelwa ukuthi bagcwalise iphepha lemibuzo elihlukile.

2.3. IZINGOZI: Loncwaningo alunazingozi noma kuziguli (komama)

2.4. INSIZAKALO ENOKWENZEKA: Insizakalo kosompilo nakuziguli ayizoba emntwini oyedwa,kodwa yeyezwe ngobubanzi ngoba ulwazi olutholakele lizosetshenziselwa ukuphucula ikhono losompilo ukunikezela inkonzo ngempumelelo nokuphucula inxaso iziguli eziyithola kulolu hlelo.

2.5. UKUFIHLAKALA: Ulwazi oluqoqiwe kulolucwaningo lizophathwa njengoluyimfihlo futhi lizofakwa kwithisisi nakwijenali kuphela. Umhlangayeli noma isiguli akazovezwa nanini – nanoma yingasiphi isizathu noma inhloso.

2.6. UKUTHOLAKALA KWEZIPHUMO: Ucwaningo luhlose ikakhulu ukunika osompilo amandla wokunikeza iziguli inkonzo enempumelelo ukuze iziguli zikwazi ukwenza izinqumo ezaziswe kahle ngokukhetha indlela yokondla ingane, ngalokho okutholakele nezincomo zocwaningo ziza kwenziwa ukuthi zitholakale ikakhulu kumnyango wezempilo eMpumalanga, ngokubhaliwe.

2.7. UKUHLANGANYELA NGOKWENTANDO/UKUNQABA/UKUYEKA: Wena, mhlanganyeli noma siguli, uhlanganyela ngokuthanda kulolucaningo. Wena noma umphathi wakho/*umlondolozi wakho unelungelo lokunqaba ukuhlanganyela kulolu cwaningofuthi ninelungelo lokuyeka ukuhlanganyela nanini futhi loku kunqaba ukuhlanganyela akukuzu kukulimaza ukwelashwa kulesi simiso.

3. Lombiko ongaphezuluuchaziwe kimina/*kwisigulu/*kumhlanganyeli ngu ..... (igama lomuntu ofanele) ngesi Bhunu/*Ngesi/SiZulu/*olunye ..... Futhi ngi/isiguli si/*umhlanganyeli u –nobuciko balolu lwimi/*Litolikwe ngokujabulisayo kimina/*kuye ngu ..... (igama likatoliki). Mina/*Isiguli/*Umhlanganyeli ulinikiwe ithuba lokuthi abuze imibuzo futhi yonke imibuzo iphendulwe ngokujabulisayo.
4. Akukho kucindezela okusetshenzisiwe kimi/*kwisiguli/*kumhlanganyeli ukuthi avume ukuhlanganyela futhi mina/*isiguli/*umhlanganyeli uyaqonda ukuthi mina/*isiguli/*umhlanganyeli angahoxa nanini ngaphandle kokuhlawuliswa.
5. Ukuhlanganyela kulolu cwaningo akuzukukhokhelela ekongezweni kwezindleko kimi/*kusiguli/*kumhlanganyeli.

B. NGALOKHU NGIYAVUMA NGOKUZITHANDELA UKUHLANGANYELA KULOLUWANINGO/*UKUTHI ISIGULI/*ONGABA NGUMHLANGANYELI ANGAHLANGANYELA KULOLUCWANINGO OLUPHAWULWE NGENHLA

Isayindwe/iqinisekiswe e .....(indawo) ngo ..... 200..... (umhla)

....
isiginesha noma isithupa sangekwesokudla sesiguli/omele isiguli/umhlanganyeli

isiginesha kafakazi

ISITATIMENDE NGO NOMA NGENXA YOMPHANDI NOMA ABAPHANDI:

Mina, ..., ngiyavuma ukuthi:

- Ngiwuchazile umbiko onikezwe kulomqulu ku .....(igama lesiguli/*umhlanganyeli) no/*noma ku –meli wakhe ..... (igama lomeli);
- Ukhuthaziwe wanikwa nethuba elanele lokungibuza nawuphi umbuzo;
- Lengxoxo yenziwe ngesiBhunu/*Ngesi/*siZulu/*olunye ..... Futhi akukho toliki osetshenzisiwe/*lengxoxo itolikelwe esi ..... (ulwimi) ngu ..... (igama).

Isayindwe e .....(indawo) ngo .....200... (umhla)

....
isiginesha yomphandi/*omele umphandi

isiginesha kafakazi

ISIMEMEZELO SIKATOLIKI

Mina, ...(igama), ngiyaqinisekisa ukuthi ngi:

- Kutolikile okuqulathwe ngulomqulu ukusukela esiNgesini ukuya esi .....(chaza ulwimi olufanele) kusiguli/*komele isiguli/*kumhlanganyeli;
- Kuchazile okuphakathi kwalomqulu kusiguli/*komele isiguli/*kumhlanganyeli;
- Futhi ngatolika nemibuzo ebuzwe ngu .....(igama), nezimpendulo ezinikezwe ngumphandi/*ngomele umphandi; futhi
- Ngidlulise ngokuhumusha ngokuvesa okushiwo kimi

Isayindwe e .....(indawo) ngo .....200... (umhla)

.... isiginesha katoliki isiginesha kafakazi

UMBIKO OBALULEKILE KUSIGULI/*OMELE ISIGULI/*UMHLANGANYELI:

Siguli/*omele isguli/*mhlanganyeli obekekile

Ngiyabonga ngokuhlangayela kwakho kulolucwaningo. Uma nanini ngenkathi yocwaningo okuphuthmayo kuvele ngenxa yocwaningo noma udinga olunye ulwazi mayela nocwaningo, xhumana no Mrs A. Davis kule nombolo 017 826 2222 x 2214

APPENDIX M

CHAPTER 3

RESULTS: FURTHER ANALYSIS OF RESULTS

3.2. THE FINDINGS

3.2.1. Health care workers

3.2.1.1. Socio-demographic profile of the health care workers

The qualifications of the health care workers in the sample, were divided into different categories and was obtained between 1970 – 2004 (Table 3.1).

Table 3.1: The type and year of qualification of health care workers in the sample (n = 57)

Qualification	n (%)	Year in which qualification was obtained:						
		2000-2004	1995-1999	1990-1994	1985-1989	1980-1984	1975-1979	1970-1974
Enrolled Nurse Assistant	2 (4)	0 (0)	0 (0)	1 (2)	0 (0)	0 (0)	1 (2)	0 (0)
Enrolled Nurse	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Professional Nurse	10 (18)	4 (7)	4 (7)	1 (2)	0 (0)	0 (0)	0 (0)	1 (2)
Senior Professional Nurse	10 (18)	0 (0)	3 (5)	2 (4)	2 (4)	1 (2)	0 (0)	2 (4)
Chief Professional Nurse	20 (35)	5 (8)	7 (12)	3 (5)	1 (2)	4 (7)	0 (0)	0 (0)
Lay Counsellor	15 (26)	6(10)	5 (8)	2 (4)	1 (2)	0 (0)	0 (0)	1 (2)

Enrolled nursing assistants mostly counselled between 0-10 women per week, whereas professional nurses, senior professional nurses and chief professional nurses mostly counselled between 0-5 women per week and lay counsellors mostly counselled between 6-10 women per week with regard to PMTCT (Table 3.2).

Table 3.2: Number of mothers counselled by each category of health care workers per week with regard to PMTCT (n = 57)

Qualification of health care worker	**Number of women counselled per week**			
	0 - 5	**6 - 10**	**11 - 15**	**> 15**
Enrolled Nurse Assistant	1	1	0	0
Enrolled Nurse	0	0	0	0
Professional Nurse	7	2	1	0
Senior Professional Nurse	4	3	1	2
Chief Professional Nurse	12	3	3	2
Lay Counsellor	2	7	3	3

3.2.1.5. Knowledge of the health care workers regarding breast-feeding and formula-feeding

Knowledge of breast-feeding

The Pearson Chi Square Test revealed significant differences between the municipal areas and whether or not health care workers advised mothers to mix-feed (p = 0.009) (Figure 3.1).

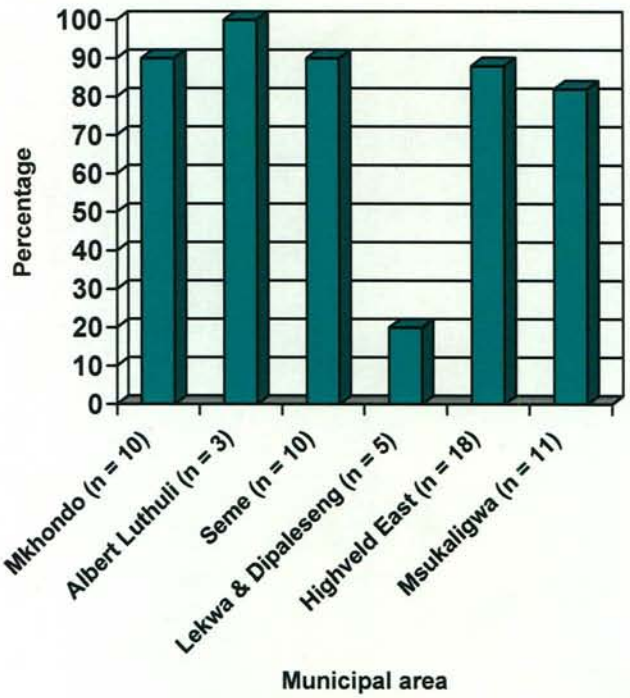

Figure 3.12: Percentage distribution of health care workers advising mothers not to practice mixed-feeding by municipal area (p = 0.009)

Knowledge of formula-feeding

The Pearson Chi Square Test revealed significant differences (p = 0.017) between municipal areas and the knowledge of the health care workers regarding the average amount of commercial infant formula needed per day by a term infant (Figure 3.2).

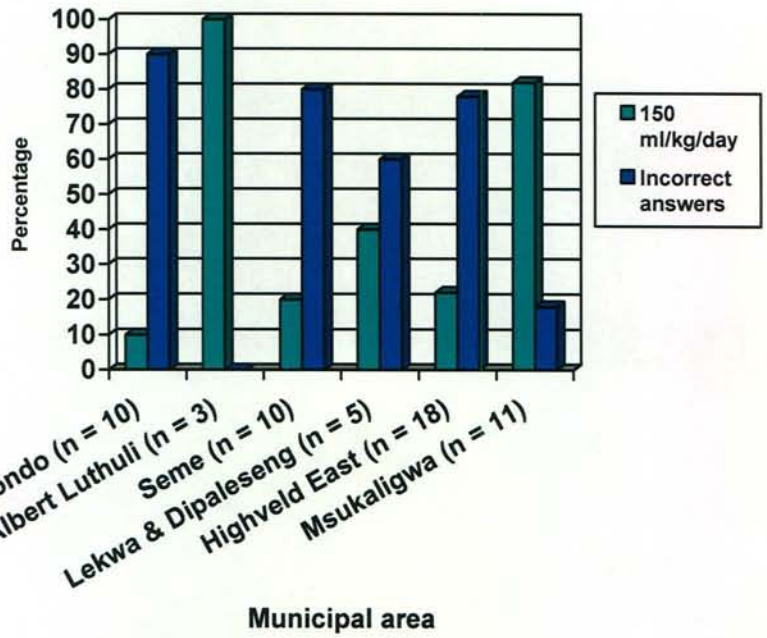

Figure 3.2: Percentage distribution of the health care workers knowing the correct average amount of commercial infant formula needed per day by a term infant by municipal area (p = 0.017)

Thirty two (56%) of the health care workers in the sample (n = 57) knew that the amount of commercial formula feed needed per day by a term infant should be divided into 6 – 8 feeds per day. The rest of the health care workers indicated incorrect answers (Table 3.3).

Table 3.3: Knowledge of the health care workers regarding the number of feeds the average amount of commercial formula feed needed per day by a term infant should be divided into (n = 57)

Number of feeds per day	n (%)
2-4	2 (4)
4-6	8 (14)
6-8	32 (56)
8-10	12 (21)
None of the above	3 (5)

The Pearson Chi Square Test revealed significant differences between municipal areas and the knowledge of the health care workers regarding the preparation of formula feeding (Table 3.4). Most health care workers in all the municipal areas did not teach mothers to keep the boiled water covered while it was cooling ($p = 0.004$). Most health care workers who taught mothers to use a cup to feed the formula were located in Seme and Msukaligwa ($p = 0.026$) and most of the health care workers who taught mothers to wash the utensils after preparing the formula feed were located in Albert Luthuli and Msukaligwa ($p = 0.005$).

Table 3.4: Significant differences between municipal areas and the knowledge of the health care workers regarding the preparation of formula feeds

Socio-demographic variable	Variable	p value
Municipal area	Preparation of a formula feed:	
	1. Keep water covered while cooling	$p = 0.004$
	2. Cup feeding	$p = 0.026$
	3. Wash utensils after preparation	$p = 0.005$

3.2.2. Mothers

3.2.2.1. Socio-demographic profile of the mothers

The 55 mothers' data used in the study represented all seven municipal areas (Figure 3.3).

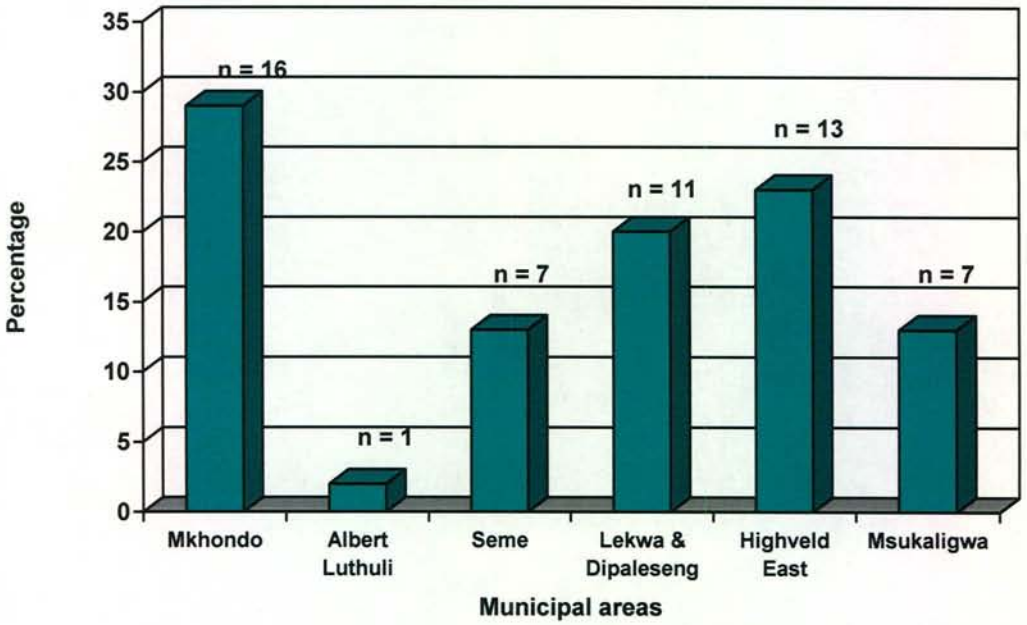

Figure 3.3: Percentage distribution of mothers in the sample by municipal area (n = 55)

Although all seven municipal areas were represented in the study, 9 of the 23 PMTCT sites were not represented in the study for various reasons (Table 3.5).

Table 3.5: Reasons for PMTCT sites not being included in the study

Reasons	Number of PMTCT sites
No mothers during month of data collection	6
Misplaced questionnaires	1
Mothers approached refused consent	1
Youngest child older than 4 months	1

3.2.2.2. General Information

Reports of significant differences (Pearson Chi Square Test) between municipal areas and other variables in the sample, in all the following sections, excluded the Albert Luthuli municipal area, because the total available sample for the Albert Luthuli municipal area, did not allow for meaningful statistical analysis.

The Pearson Chi Square Test revealed significant differences ($p = 0.042$) between the municipal areas and the feeding options chosen by the mothers (Figure 3.4).

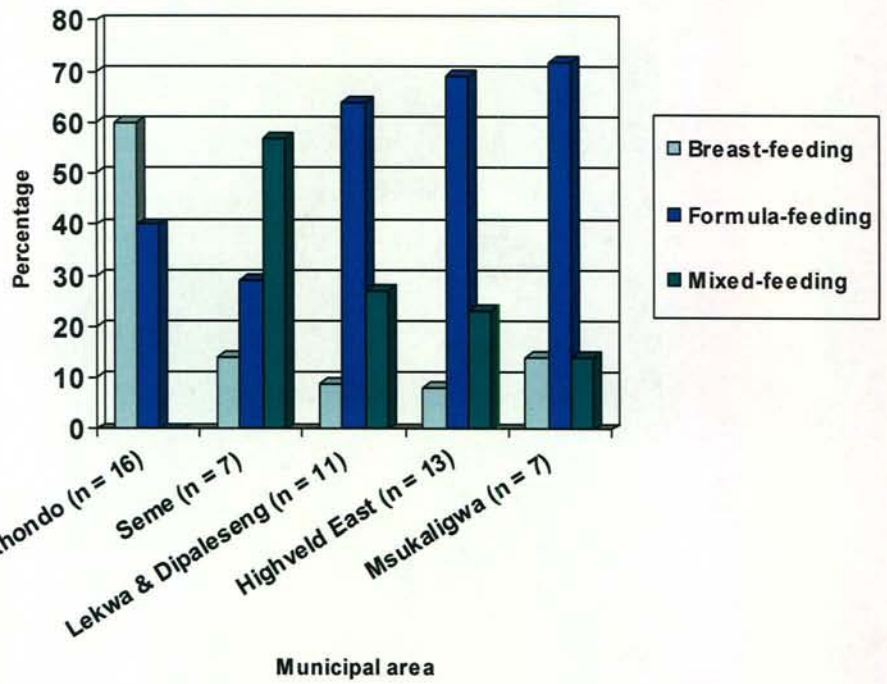

Figure 3.4: Percentage distribution of selected feeding options of mothers by municipal area ($p = 0.042$)

The Pearson Chi Square Test revealed significant differences (p = 0.035) between the municipal areas and whether or not the mothers were influenced by family members to choose a specific feeding option (Figure 3.5).

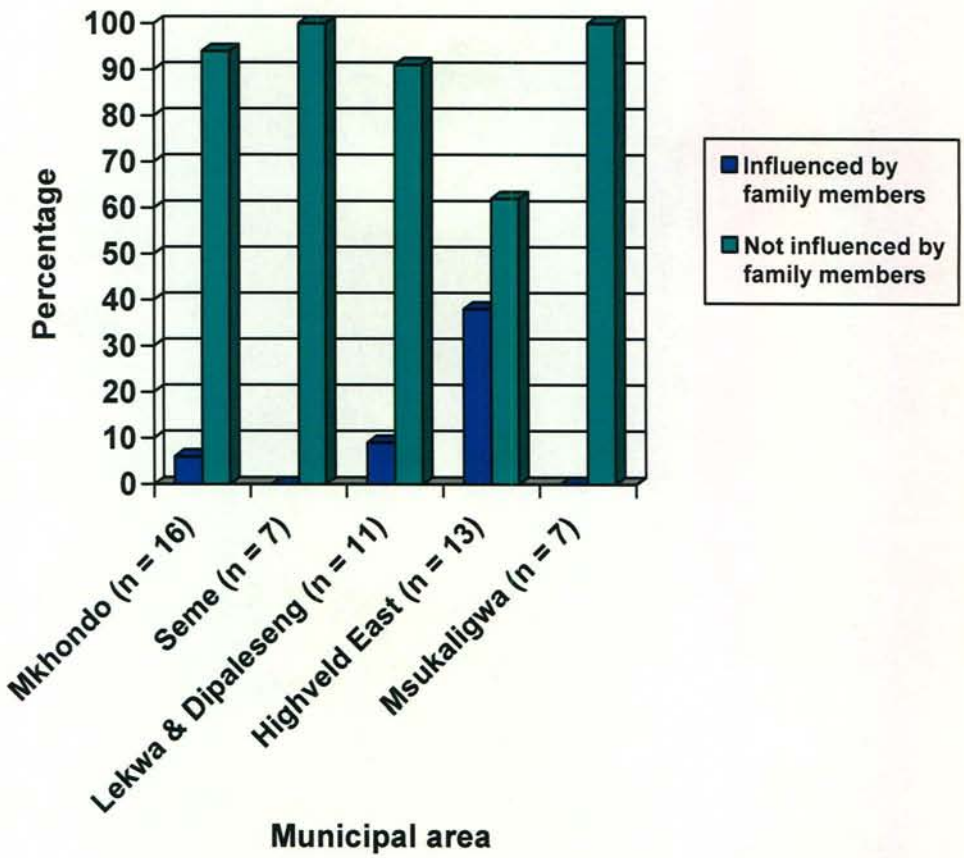

Figure 3.5: Percentage distribution of mothers influenced by family members to choose a specific feeding option by municipal areas (p = 0.035)

3.2.2.3. Mothers who breast-feed

The Pearson Chi Square Test also revealed significant differences (p = 0.036) between municipal areas and whether or not the infants refused the breast (Figure 3.6).

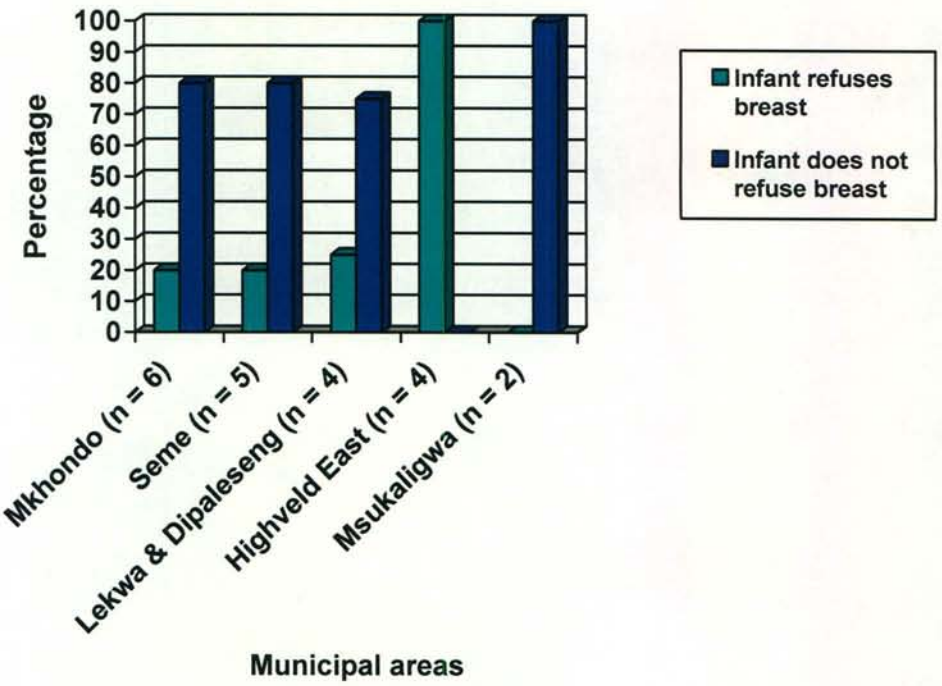

Figure 3.6: Percentage distribution of mothers experiencing problems with infants refusing the breast by municipal area (p = 0.036)

3.2.2.4. Mothers who formula-feed

The Pearson Chi Square Test also revealed significant differences (p = 0.011) between the municipal areas and whether or not health care workers had explained the preparation of the formula to the mother (Figure 3.7).

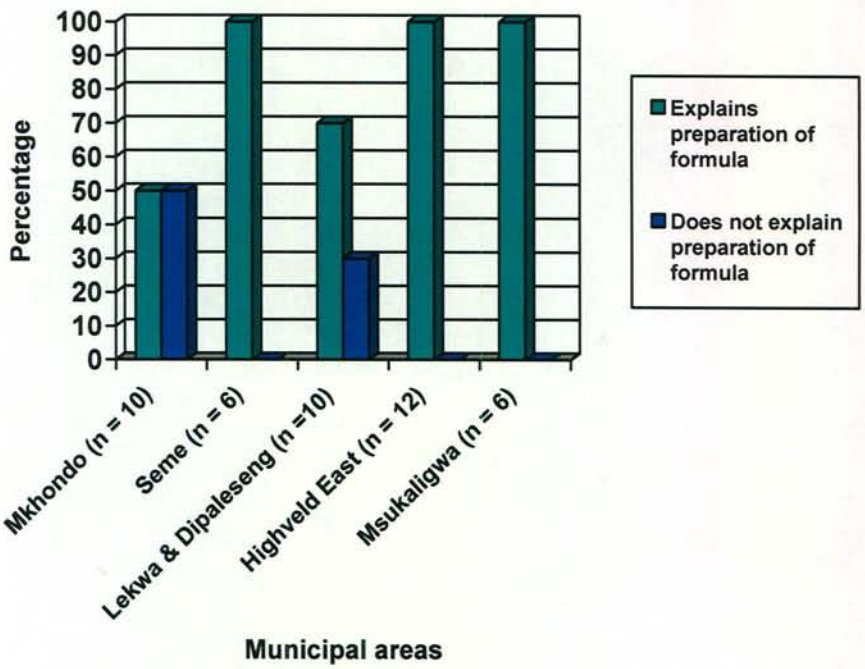

Figure 3.7: Percentage distribution of health care workers explaining the preparation of the formula to the mother by municipal area (p = 0.011)

The Pearson Chi Square Test revealed significant differences (p = 0.012) between the municipal areas and whether or not health care workers gave mothers the opportunity to demonstrate the preparation of the formula feed to the health care worker (Figure 3.8).

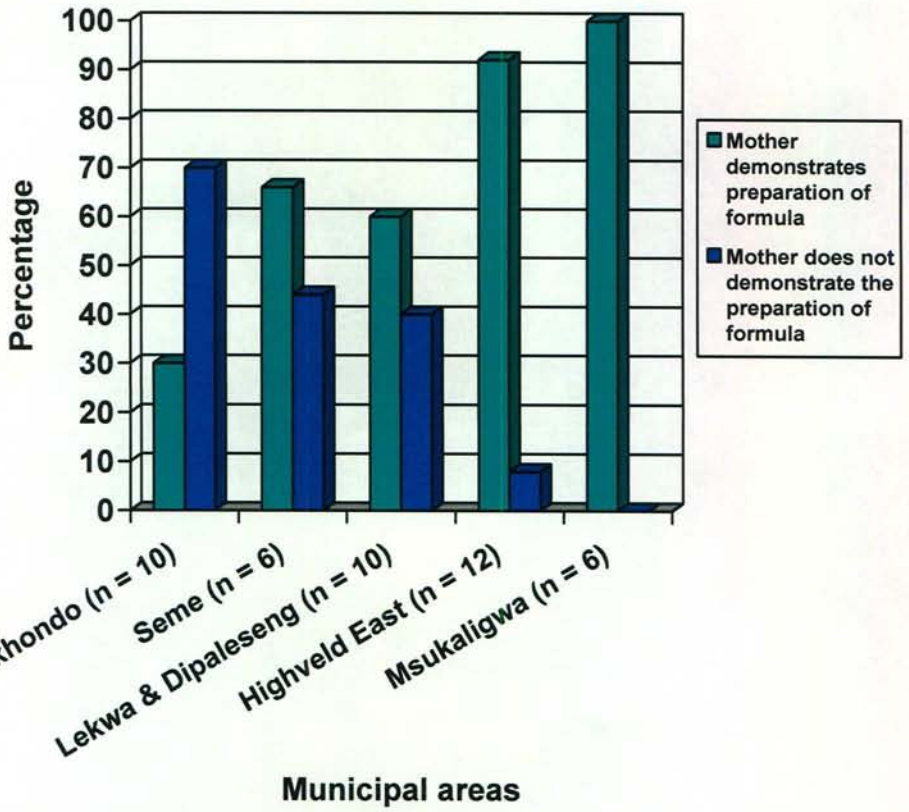

Figure 3.8: Percentage distribution of health care workers who gave mothers the opportunity to demonstrate the preparation of the formula feed to the health care worker and those who did not (p = 0.012)

The Pearson Chi Square Test also revealed significant differences between the municipal areas and whether or not mothers washed their hands before preparing the formula feed (p = 0.003), as well as whether or not the mothers used levelled scoops of formula powder to prepare the formula feed (p = 0.000) (Figure 3.9).

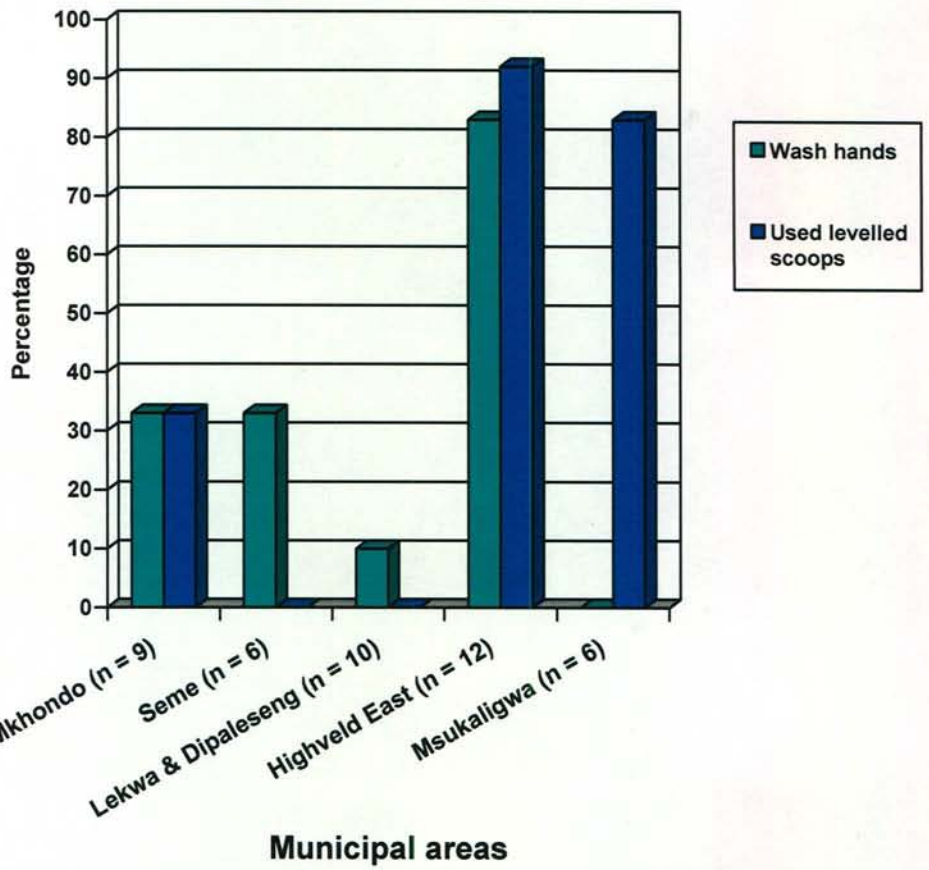

Figure 3.9: Percentage distribution of mothers who washed their hands before preparing a formula feed (p = 0.003) and who used levelled scoops of formula powder to prepare the formula feed by municipal area (p = 0.000)

The Pearson Chi Square Test revealed significant differences between the municipal areas and the availability of fuel for the preparation of the feed (p = 0.05), as well as whether mothers prepared feeds separately or all at once (p = 0.042) (Figure 3.10).

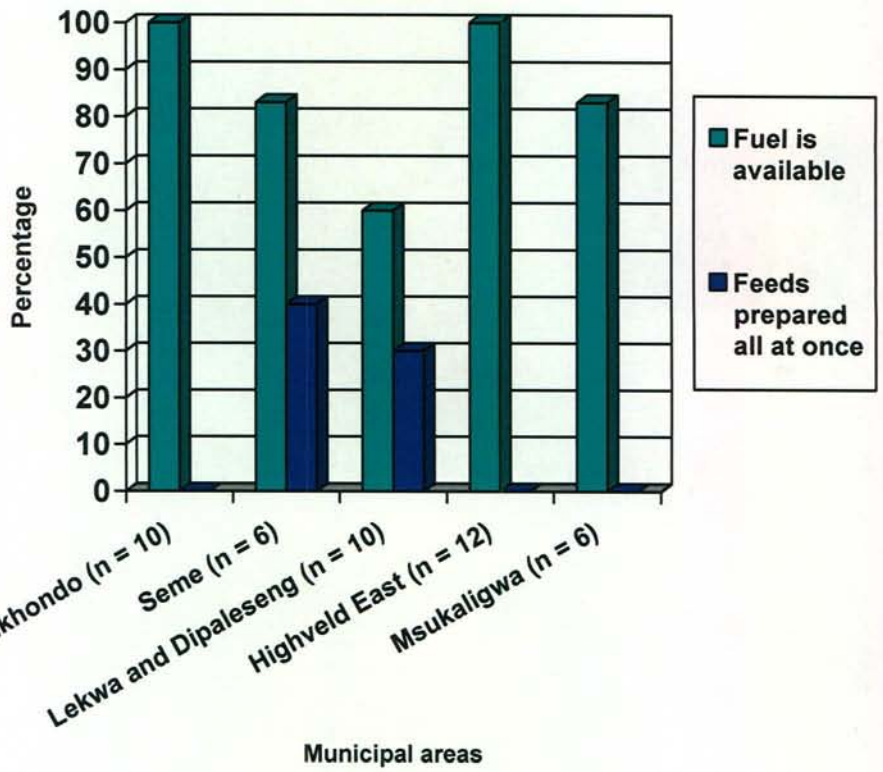

Figure 3.10: Percentage distribution of mothers who always had fuel available to prepare feeds (p = 0.05) and percentage of mothers who prepare all the feeds of the day at one time (p = 0.042) by municipal area

The Pearson Chi Square Test revealed significant differences (p = 0.002) between the municipal areas and where the mother stored the prepared feed (Figure 3.11).

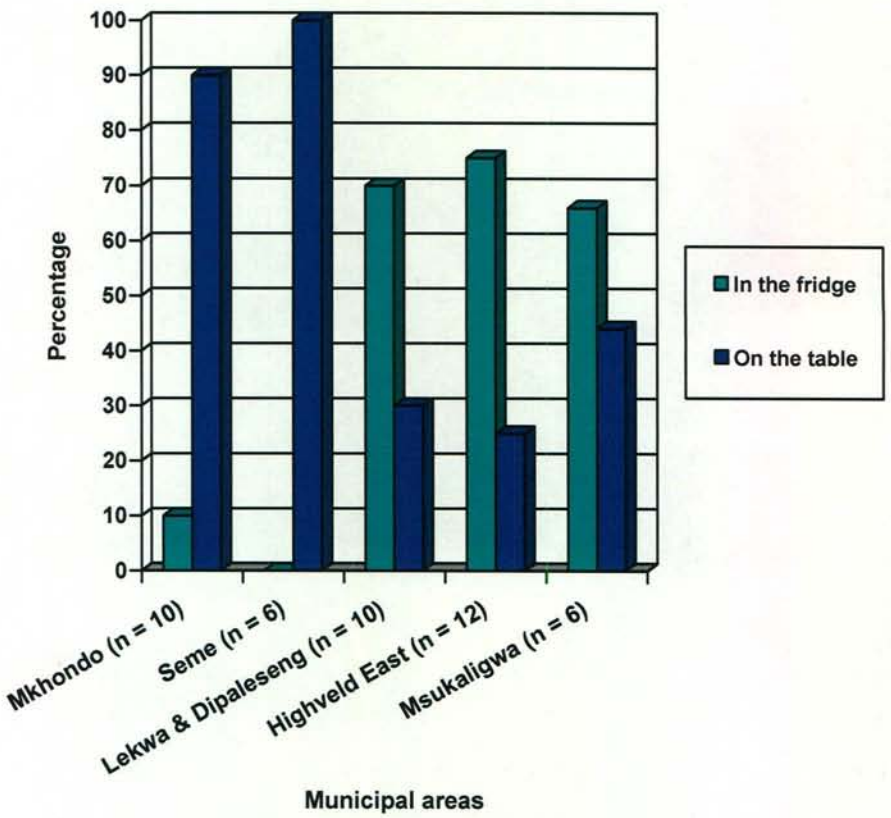

Figure 3.11: Percentage distribution of mothers storing the prepared feed in the fridge or on the table by municipal area (p = 0.002)

The Pearson Chi Square Test revealed significant differences (p = 0.001) between municipal areas and the time span in which mothers used the prepared formula feed (Figure 3.12).

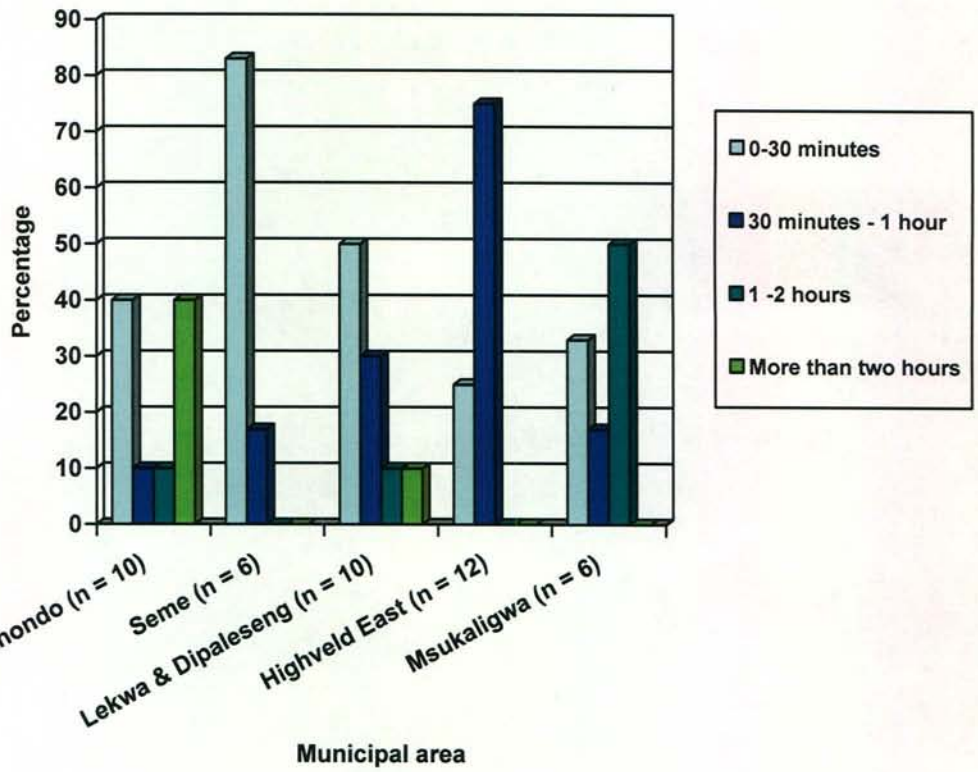

Figure 3.12: Percentage distribution of mothers using the prepared formula feed within a certain time span by municipal area (p = 0.001)

The Pearson Chi Square Test revealed significant differences (p = 0.019) between the municipal areas and whether or not mothers chose to formula feed because they would receive free formula from the PMTCT Programme (Figure 3.13).

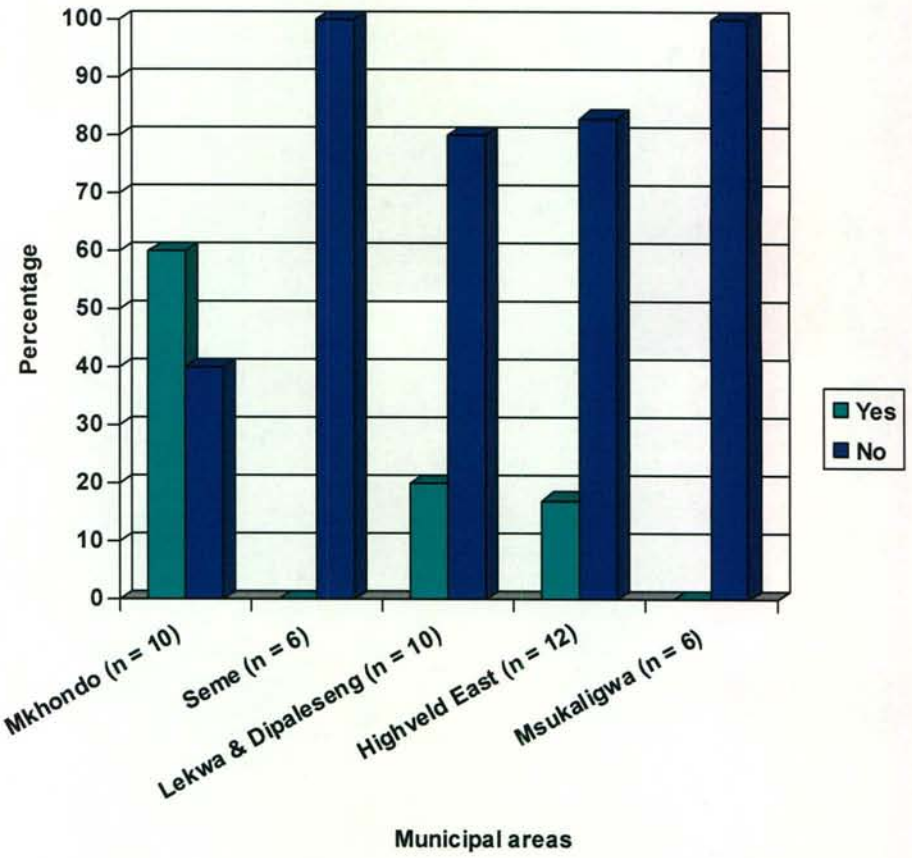

Figure 3.13: Percentage distribution of mothers who chose to formula-feed their infants because they receive free formula from the PMTCT Programme (p = 0.019) by municipal area

The Pearson Chi Square Test revealed significant differences (p = 0.029) between the municipal areas and whether or not mothers had a continuous supply of formula available (Figure 3.14).

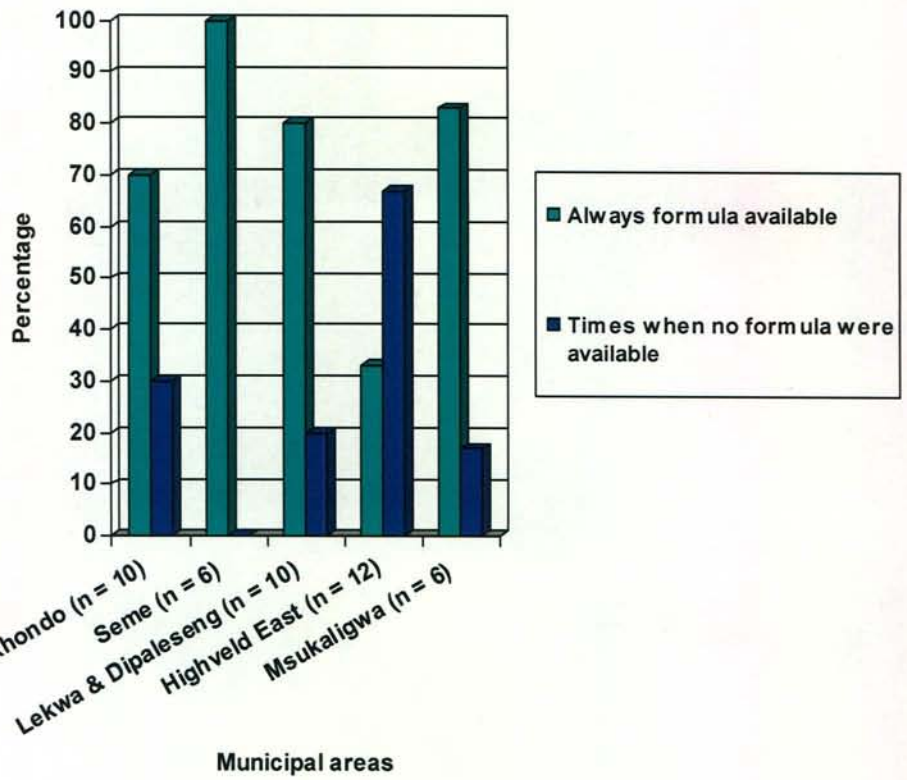

Figure 3.14: Percentage distribution of mothers who have a continuous supply of formula available and those who do not by municipal areas (p = 0.029)

3.2.3. Significant difference between the replies given by the health care workers and the mothers to the same questions in the questionnaire

When using the Pearson Chi Square Test to compare identical variables between the health care workers and the mothers, significant differences were found regarding the time span in which breast-feeding should start after birth (p = 0.000) (Figure 3.15) and regarding the demonstration of the preparation of formula feed by health care workers to mothers (p = 0.001) (Figure 3.16).

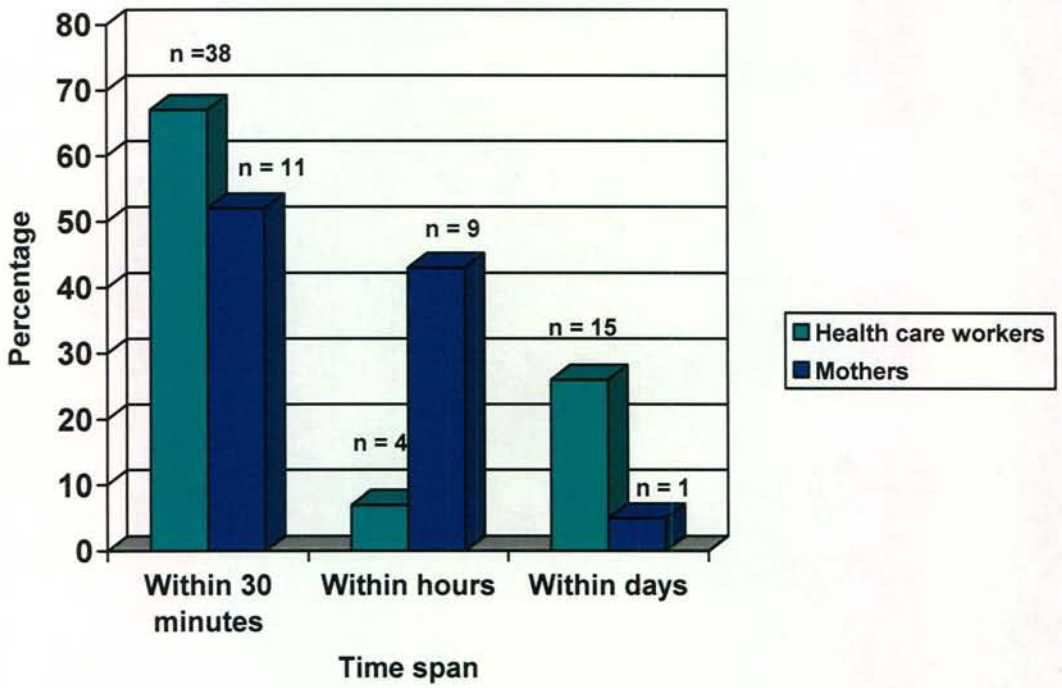

Figure 3.15: Percentage distribution of the knowledge of health care workers regarding when a mother should start breast-feeding after birth compared to the percentage distribution of when mothers started breast-feeding after birth (p = 0.000)

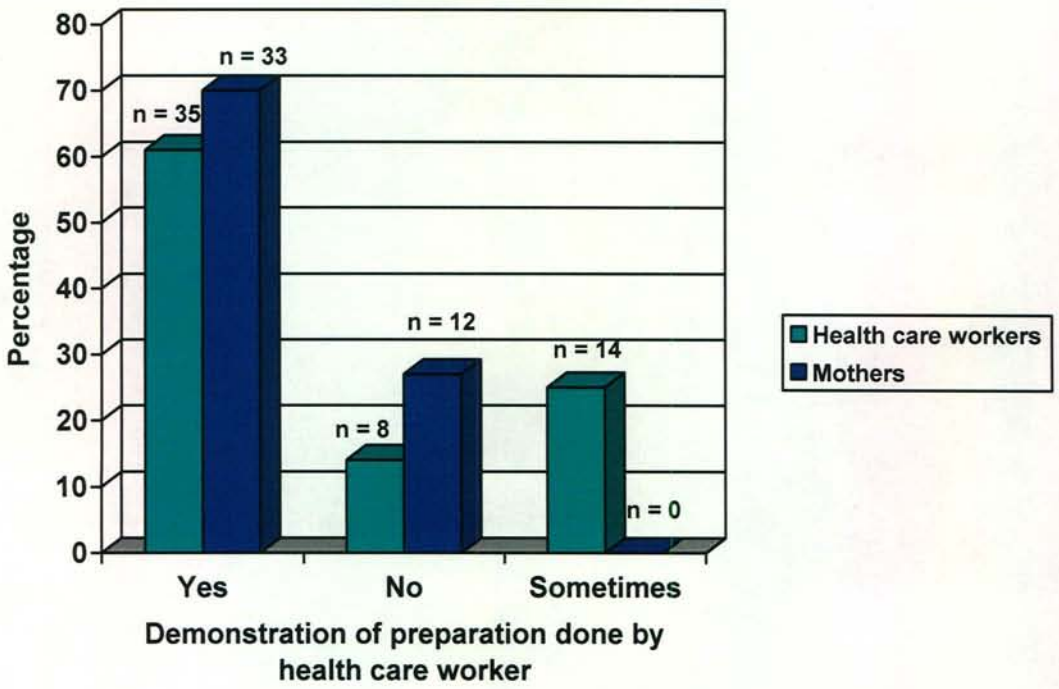

Figure 3.16: Percentage distribution of health care workers indicating that they demonstrated the preparation of the formula to the mothers compared to the percentage distribution of the mothers indicating if health care workers did demonstrate the formula feed to the mother (p = 0.001)

Health care workers were asked to describe how they explained the preparation of a formula feed to the mothers and mothers on the other hand were asked to explain how they prepared the formula feed. The Pearson Chi Square Test revealed significant differences for 6 of the seven basic steps for the preparation of a formula feed (Table 3.6).

Table 3.6: Significant differences between how health care workers explained the preparation of a formula feed to the mothers and how mothers prepared a formula feed

Basic steps of preparing a formula feed	Health care workers n (%)	Mothers n (%)	p value
Get equipment ready	22 (39)	5 (11)	p = 0.002
Wash hands before preparing feeds	44 (77)	21 (48)	p = 0.002
Bring water to the boil	57 (100)	38 (86)	p = 0.004
Keep water covered while it cools	5 (9)	0 (0)	p = 0.044
Feed the infant using a cup	16 (28)	2 (5)	p = 0.002
Wash the utensils	5 (9)	0 (0)	p = 0.044

It cannot be sure if these health care workers counselled these mothers seeing that no exit interviews was held, yet this is the experience of this study and in view of the small sample, the results should be interpreted with caution.

3.2.4. Significant differences between non-professional and professional health care workers in terms of performance and knowledge

3.2.4.1. Performance

When using the Pearson Chi Square Test to compare differences in performance between non-professional and professional health care workers, significant differences were found regarding the number of women counselled per week by the non- professional and professional health care workers (p = 0.045) (Table 3.7).

Table 3.7: Significant differences between the non-professional and professional health care workers regarding the number of mothers counselled per week

Socio-demographic variable	Performance	p value
Professional group	Number of women counselled per week	p = 0.045

3.2.4.2. Knowledge

When using the Pearson Chi Square Test to compare differences in knowledge between non-professional and professional health care workers, significant differences were found between the two groups and their knowledge regarding when a mother should start breast-feeding after birth (p = 0.000), their knowledge regarding what advice a mother with mastitis should be given (p = 0.022) and their knowledge regarding the amount of formula feedings needed per day by a term infant (p = 0.003) (Table 3.8).

Table 3.8: Statistically significant differences between the knowledge of non-professional and professional health care workers

Socio-demographic variable	Knowledge	p value
Professional group	When a mother should start breast-feeding after birth	p = 0.000
	Advice a mother with mastitis should be given	p = 0.022
	Amount of formula feedings needed per day by a term infant	p = 0.003